DTIC

UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

LIQUID FUEL SYSTEMS MAINTENANCE

AFSC 3E4X2

OSSN: 2392

JANUARY 2000

OCCUPATIONAL ANALYSIS PROGRAM
AIR FORCE OCCUPATIONAL MEASUREMENT SQUADRON
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PREFACE

This report presents the results of an Air Force Occupational Survey of the Liquid Fuel Systems Maintenance career ladder, Air Force Specialty Code (AFSC) 3E4X2. Authority for conducting occupational surveys is contained in AFI 36-2623. Computer products used in this report are available for use by operations and training officials.

The survey instrument was developed by Mr. Scott Vap. Computer programming support was provided by Mrs. Rebecca Hernandez. Ms. Dolores Navarro provided administrative support. Ms. Kimberly Williams analyzed the data and wrote the final report. This report has been reviewed and approved by Lt Col Roger W. Barnes, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies are available upon request to AFOMS/OMYXI, 1550 5th Street East, Randolph Air Force Base, Texas 78150-4449, or by calling DSN 487-5543. For information on the Air Force occupational survey process or other on-going projects, visit our web site at http://www.omsq.af.mil.

JAMES M. COLLINS, Lt Col, USAF
Commander
Air Force Occupational Measurement Sq

JOSEPH S. TARTELL
Chief, Occupational Analysis Flight
Air Force Occupational Measurement Sq

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SUMMARY OF RESULTS

1. **Survey Coverage**: The Liquid Fuel Systems Maintenance career ladder was surveyed to provide current job and task data for use in updating career ladder documents and training programs. Survey results are based on responses from 224 members accounting for 45 percent of the total population surveyed. Of the 224 respondents, 165 were active duty (AD), 34 were Air National Guard (ANG), and 25 were Air Force Reserve Command (AFRC). Responses were received from 56 percent of all assigned AD personnel, 17 percent of all assigned ANG personnel, and 30 percent of all assigned AFRC personnel. The total sample (N=224) accounts for 39 percent of all assigned AD, ANG, and AFRC members. All major commands (MAJCOMs) are well represented in the survey sample.

2. **Specialty Jobs**: Two clusters and two jobs were identified in the career ladder structure analysis. The Liquid Fuel Systems Maintenance Cluster and the General Maintenance Cluster are oriented toward technical task performance and account for 79 percent of the survey population. The Reserve Forces Readiness Job focuses on the performance of mobility, contingency, and Prime base engineer emergency force (BEEF) activities. Members of the Management Job primarily perform management, training, and supply activities.

3. **Career Ladder Progression**: A typical pattern of progression is noted within the AFSC 3E4X2 career ladder. Personnel at the 3-skill level and 5-skill level work in the technical jobs of the career ladder and spend most of their time on technical tasks. Members of AFSC 3E452 also perform general management, supervisory, training, and supply tasks. As incumbents move up to the 7-skill level, they perform many more supervisory tasks but still spend 60 percent of their time performing the technical tasks of the career ladder. Comparative analysis across the Duty Air Force Specialty Code (DAFSC) groups for the service components reveals that the same pattern holds for the ANG and AFRC 5- and 7-skill level members although the AD 7-skill level members spend more time on management, supervisory, and training activities, especially compared to the ANG DAFSC 3E472 personnel.

4. **Training Analysis**: The current AFSC 3E4X2 Specialty Training Standard (STS) and Plan of Instruction (POI) are supported by occupational survey report (OSR) data. Training, functional, and career field personnel are to be commended for producing an STS and POI that are well supported by the field. Many tasks not referenced to the STS and POI, however, should be reviewed to determine modifications that may be necessary to improve the effectiveness or efficiency of training.

5. **Job Satisfaction**: Job satisfaction among AFSC 3E4X2 personnel is higher overall for the 49-96 months' and 97+ months' Total Active Federal Military Service (TAFMS) groups but lower for the 1-48 months' TAFMS groups compared to the 1998 sample of like Support AFSCs. Reenlistment intentions, however, are slightly higher than the comparative sample for first-and second-enlistment personnel. Job satisfaction is also lower for first-enlistment members in the current survey compared to the 1997 survey sample.

6. **Implications**: Survey results indicate the present classification structure accurately portrays the jobs performed in this career ladder. Progression through the career ladder is typical of most AFSCs. Training documents warrant review for the possible addition of elements concerning specific tasks with high percent members performing, training emphasis, and task difficulty. Job satisfaction ratings are higher overall when compared to similar AFSCs except for first-enlistment personnel.

OCCUPATIONAL SURVEY REPORT (OSR)
LIQUID FUEL SYSTEMS MAINTENANCE
(AFSC 3E4X2)

INTRODUCTION

This is a report of an occupational survey of the Liquid Fuel Systems Maintenance career ladder conducted by the Air Force Occupational Measurement Squadron (AFOMS). The current Liquid Fuel Systems Maintenance career ladder was created in October 1993. Survey data will be used to identify current utilization patterns among career ladder personnel and evaluate career ladder documents and training programs.

Background

As described in the AFMAN 36-2108, *Airman Classification,* 31 October 1999, Specialty Description, 31 October 1999, Liquid Fuel Systems Maintenance personnel install, inspect, maintain, troubleshoot, repair, and modify liquid fuel storage, distribution, and dispensing systems. This includes checking components for operation, adjustment, pressures, and internal and external leaks under pressure. The Liquid Fuel Systems Maintenance personnel also perform facility surveys, survey proposed work to determine resource requirements, and prepare cost estimates for in-service work.

Personnel entering the AFSC 3E4X2 career ladder must attend the J3ABR3E432-003, Liquid Fuel Systems Maintenance Apprentice course at Sheppard AFB TX. This course is designed to train students on the proper procedures for the inspection and maintenance of liquid conventional fuel storage and dispensing systems. Instruction is provided on the fundamentals of basic hydraulics and electricity; fabrication of piping and fitting assemblies; inspection and maintenance of storage tanks, pumps, unloading facilities, filtration systems, gauges, meters, valves, strainers, and Type I, II, III, and IV hydrant aircraft refueling systems components; and troubleshooting the installed mechanical and hydrant systems used for storing and dispensing aviation and ground fuels. Students are also instructed on the application of Air Force technical orders, manuals, directives, maintenance publications, and forms.

Entry into this career ladder currently requires an Armed Forces Vocational Aptitude Battery (ASVAB) score of Mechanical – 44. A strength factor of "G" (Weight lift of 40 lbs) is also required. For entry into this specialty, normal color vision as defined in AFI 48-123, *Medical Examination and Standards*, is mandatory. For award, entry, and retention of this AFSC, qualification to operate government vehicles according to AFMAN 24-309, *Vehicle Operations*, is mandatory.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) Occupational Survey Study Number (OSSN) 2392, dated July 1999. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, pertinent tasks from the previous survey instrument, and data from the last OSR. The preliminary task list was refined and validated through personal interviews with 44 subject-matter experts (SMEs) at the following training location and operational bases:

BASE	UNIT VISITED	REASON FOR VISIT
Sheppard AFB TX	366 TRS	Resident technical training school
Eglin AFB FL	96 CES	AFMC base
Hurlburt Field FL	16 CES	AFSOC base
Minot AFB ND	5 CES	Minuteman missiles
Grand Forks AFB ND	319 CES	AMC base
Travis AFB CA	60 CES	AMC base
Whiteman AFB MO	509 CES	ACC base
Barksdale AFB LA	2 CES	Research and development department

The resulting JI contains a comprehensive listing of 700 tasks grouped under 18 duty headings and a background section requesting information, such as grade, base, MAJCOM assigned, organizational level, schedule worked, job title, and work or functional area. Also included in the background section are 24 questions dealing with liquid fuel systems maintenance, such as types of equipment maintained and types of systems used at the respondent's base or installation.

Survey Administration

From July to October 1999, base training offices at operational units worldwide administered the inventory to eligible AFSC 3E4X2 personnel. Job incumbents were selected

from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Personnel Center, Randolph AFB TX. Each individual who completed the inventory first completed an identification and biographical information section and then selected each task performed in his or her current job. After selecting all tasks performed, each member then rated each of these tasks on a 9-point scale, showing relative time spent on that task, as compared to all other tasks checked. The ratings ranged from 1 (very small amount time spent) through 5 (about average time spent) to 9 (very large amount time spent). To determine relative time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task ratings and multiplied by 100 to provide a relative percentage of time for each task. This procedure provides a basis for comparing tasks in terms of both percent members performing and average percent time spent.

Survey Sample

Personnel were selected to participate in this survey so as to ensure an accurate representation across MAJCOMs and military paygrade groups. All eligible AFSC 3E4X2 personnel were mailed survey disks. Table 1 reflects the percentage distribution, by MAJCOM, of assigned AFSC 3E4X2 personnel as of July 1999. The 224 respondents in the final sample represent 39 percent of the total assigned personnel and 45 percent of the total personnel surveyed. Table 2 reflects the paygrade distribution for these AFSC 3E4X2 personnel.

TABLE 1

COMMAND DISTRIBUTION OF AFSC 3E4X2 PERSONNEL

COMMAND	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
ACC	13	21
PACAF	10	15
AMC	10	13
AFMC	7	9
AETC	4	6
USAFE	4	5
OTHERS	3	5
ANG	35	15
AFRC	14	11

TOTAL ASSIGNED* = 580
TOTAL SURVEYED** = 499
TOTAL IN SURVEY SAMPLE = 224
PERCENT OF ASSIGNED IN SAMPLE = 39%
PERCENT OF SURVEYED IN SAMPLE = 45%

* Assigned strength as of July 1999

** Excludes personnel in PCS, student, or hospital status, or less than 6 weeks on the job

TABLE 2

PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

GRADE	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
E-2 – E-3	15	23
E-4	19	21
E-5	27	24
E-6	26	22
E-7	12	9
E-8	-	-

* Assigned strength as of July 1999
" - " indicates less than 1 percent

Both Command and Paygrade distribution of the survey sample are close to the percent assigned with the exception of the ANG members. The sample is a true representation of the career ladder population assigned to the MAJCOMs and AFRC. Only 34 ANG members provided usable returns out of the 182 ANG members eligible to participate in the survey.

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. To obtain the needed task factor data, selected senior AFSC 3E4X2 personnel (generally E-6 or E-7 craftsmen) also completed a second disk for either training emphasis (TE) or task difficulty (TD). These disks were processed separately from the JIs. This information is used in a number of different analyses discussed in more detail within the report.

Training Emphasis (TE): TE is a rating of the amount of emphasis that should be placed on tasks in entry-level training. The 13 senior noncommissioned officers (NCOs) who completed a TE disk were asked to select tasks they felt require some sort of structured training for entry-level personnel and then indicate how much training emphasis these tasks should receive, from 1 (extremely low emphasis) to 9 (extremely high emphasis). Structured training is defined as training provided at resident training schools, field training detachments (FTDs), mobile training teams (MTTs), formal on-the-job-training (OJT), or any other organized training method. Interrater agreement for these 13 raters was acceptable. The average TE rating was 2.75, with a

standard deviation of 2.37. Any task with a TE rating of 5.12 or above is considered to have high TE.

Task Difficulty (TD): TD is an estimate of the amount of time needed to learn how to do each task satisfactorily. The 35 senior NCOs who completed TD disks were asked to rate the difficulty of each task using a 9-point scale (extremely low to extremely high). Interrater reliability was acceptable. Ratings were standardized so tasks have an average difficulty of 5.00 and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn.

When used in conjunction with the primary criterion of percent members performing, TE and TD ratings can provide insight into first-enlistment personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction supporting entry-level jobs.

SPECIALTY JOBS

The first step in the analysis process is to identify the structure of the career ladder in terms of the jobs performed by the respondents. The Comprehensive Occupational Data Analysis Program (CODAP) assists by creating an individual job description for each respondent based on the tasks performed and relative amount of time spent on these tasks. The CODAP automated job clustering program then compares all the individual job descriptions, locates the two descriptions with the most similar tasks and time spent ratings, and combines them to form a composite job description. In successive stages, CODAP either adds new members to this initial group or forms new groups based on the similarity of tasks and time spent ratings.

The basic group used in the hierarchical clustering process is the ***Job***. When two or more jobs have a substantial degree of similarity in tasks performed and time spent on tasks, they are grouped together and identified as a ***Cluster***. The structure of the career ladder is then defined in terms of jobs and clusters of jobs.

Overview of Specialty Jobs

Based on the analysis of tasks performed and the amount of time spent performing each task, two clusters and two independent jobs were identified within the career ladder. Figure 1 illustrates the clusters and jobs performed by AFSC 3E4X2 personnel.

A listing of these clusters and jobs is provided below. The stage (STG) number shown beside each title references computer printed information. The letter "N" indicates the number of personnel in each stage.

I. LIQUID FUEL SYSTEMS MAINTENANCE CLUSTER (STG028, N=156)

A. Liquid Fuel Systems Maintenance NCOIC Job
B. Liquid Fuel Systems Maintenance Mobility Job

II. GENERAL MAINTENANCE CLUSTER (STG014, N=20)

A. Pipeline and Pit Maintenance Job
B. Tank Technician Job

III. RESERVE FORCES READINESS JOB (STG040, N=10)

IV. MANAGEMENT JOB (STG027, N=16)

The respondents forming these clusters and jobs account for 91 percent of the survey sample. The remaining 9 percent, for one reason or another, did not group into one of these

clusters or jobs. Examples of job titles for these personnel include Fuels Program Manager, Infrastructure Superintendent, Quality Assurance Evaluator, Environmental Specialist, and Interactive Courseware Developer.

AFSC 3E4X2 CAREER LADDER SPECIALTY JOBS
(N = 224)

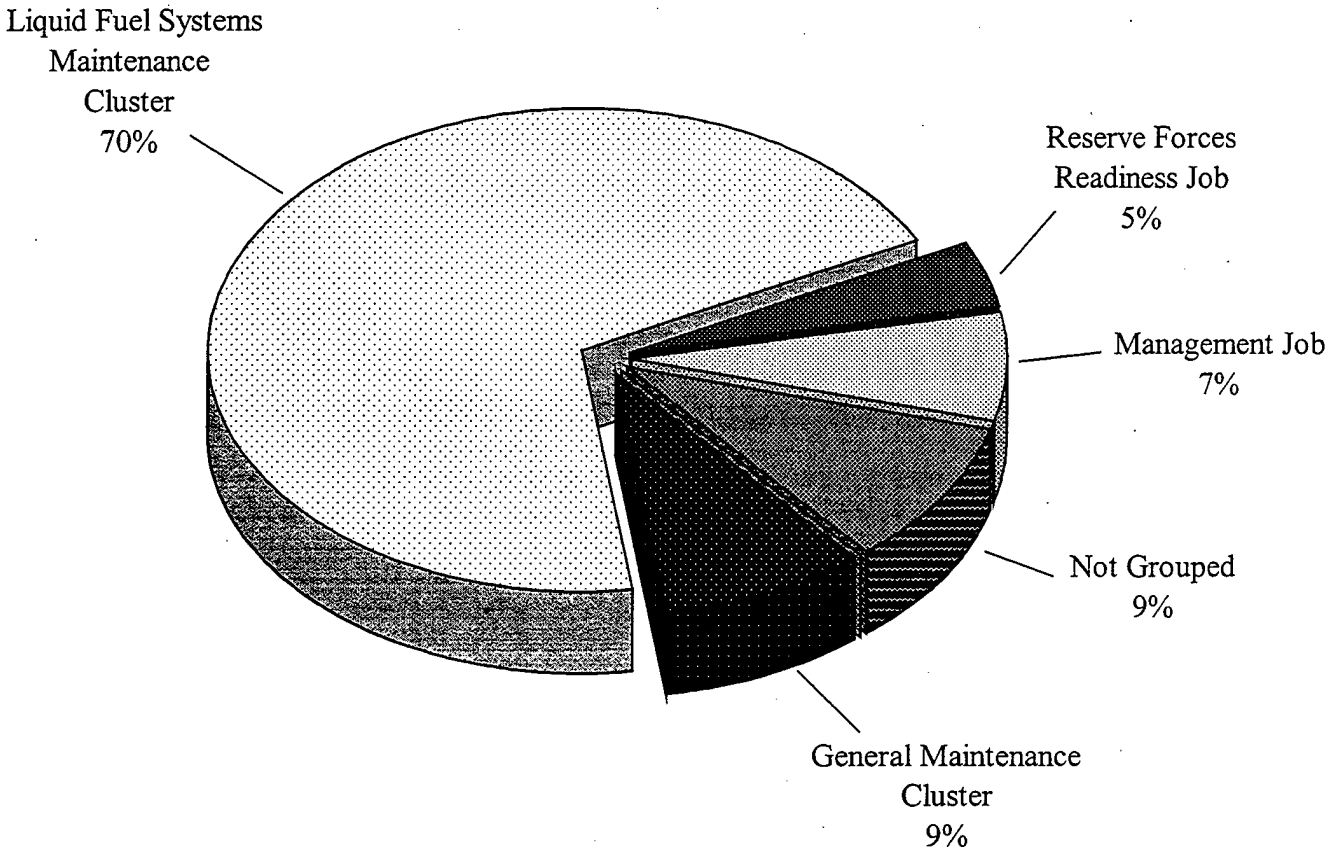

FIGURE 1

Group Descriptions

The following paragraphs contain brief descriptions of the jobs and clusters identified through the career ladder structure analysis. Table 3 presents the relative time spent on duties by members of the specialty jobs and clusters. Selected background data for the jobs and clusters are provided in Table 4. Representative tasks for all of the stages and groups are contained in Appendix A.

I. LIQUID FUEL SYSTEMS MAINTENANCE CLUSTER (STG028). The 156 members of this cluster comprise 70 percent of the survey sample and are the core of the career ladder. These members perform an average of 300 tasks with the majority of their time spent performing general maintenance activities (Duty A) and maintaining fuel systems (Duty D). Typical tasks performed by the core of the career ladder include:

- Troubleshoot automatic valves
- Drain filter separators
- Operationally inspect automatic control valves or components
- Inspect valve position indicators (VPIs)
- Replace diaphragms
- Join pipes with bolted flanges
- Join pipes with threaded fittings
- Adjust packing glands on manual valves
- Adjust pressure-relief controls
- Inspect hose connections
- Install or remove pressure gauges
- Adjust rate-of-flow controls

The predominant paygrade of this job is E-5, and almost 50 percent of the members are 5-skill levels. These members average 7½ years' TAFMS and 7 years' time in career field (TICF).

Two jobs were identified within this cluster and were distinguished by the tasks performed within the areas related to management/supervision and mobility/contingency.

The **Liquid Fuel Systems Maintenance Noncommissioned Officer-in-Charge (NCOIC) Job** is comprised of 10 members, all of whom are AD members. The members of this job spend the most time performing management, supervisory, and training activities but still spend over half of their time performing the technical liquid fuel systems maintenance (LFM) tasks, such as testing vapor levels in enclosed areas and operationally inspecting automatic control valves or components.

The **Liquid Fuel Systems Maintenance Mobility Job** is comprised of seven members who are distinguished from the other members of the Liquid Fuel Systems Maintenance Cluster by the amount of time they spend performing mobility and contingency activities (Duty N). Typical tasks performed include performing self-aid and buddy care activities, inspecting chemical warfare personal protective clothing, and performing camp security.

II. GENERAL MAINTENANCE CLUSTER (STG014). The 20 airmen performing within this cluster comprise 9 percent of the survey sample. On average, they spend most of their time (34 percent) performing general maintenance activities (Duty A). They also spend an average of 11 percent of their time cleaning, inspecting, and maintaining fuel storage tanks (Duty B). The average number of tasks performed by this group is 66. Distinctive tasks performed include:

- Clean work areas
- Clean hand tools
- Cut gasket materials
- Install or remove filter-separator elements
- Clean up fuel spills with absorbent materials
- Ground portable equipment
- Thread pipes
- Replace service station fuel hoses
- Operationally inspect filter separators
- Replace nozzles
- Manually bleed air off fuel systems
- Inspect grounding cables, rods, or bonding devices

Fifty percent of these airmen hold the 5-skill level. The predominant paygrade of this cluster is E-6. The General Maintenance Cluster members average less time in the Liquid Fuel Systems Maintenance career field than the members of the core cluster and the Management Job with 3½ years' TICF. They also average 4 years' TAFMS.

Two distinct jobs within this cluster were identified and are separated by the time spent maintaining pipelines and pits and the time spent cleaning, inspecting, and maintaining fuel storage tanks.

The **Pipeline and Pit Maintenance Job** contains six members who spend most of their time performing general maintenance tasks (27 percent) and maintaining pipelines and pits (14 percent). Typical tasks performed by the members include cleaning up fuel spills with absorbent materials, replacing flange gaskets, and hydrostatically pressure-testing pipeline systems.

The **Tank Technician Job** is comprised of five members who spend most of their time cleaning, inspecting, and maintaining fuel storage tanks in addition to performing general maintenance activities. The members of this job test vapor levels in enclosed areas, inspect underground storage tank low-level or high-level floats, and perform tank cleaning worker activities.

III. RESERVE FORCES READINESS JOB (STG040). The 10 airmen in this job comprise 5 percent of the survey sample and are distinguished by the 42 percent of their time spent performing mobility and contingency activities (Duty N) and the 21 percent of their time spent performing Prime BEEF activities (Duty M). They average only 89 tasks performed indicating

their limited exposure to many technical LFM tasks performed by the core of the career ladder. Representative tasks performed by these incumbents include:

- Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles
- Perform self-aid and buddy-care activities
- Perform chemical warfare agent decontamination procedures
- Perform camp security
- Participate in convoy exercises
- Perform cover and concealment techniques for work party security
- Perform camouflage procedures
- Don or doff chemical warfare personal protective clothing
- Inspect mobility bags or kits
- Identify chemical warfare agents
- Perform explosive ordnance reconnaissance
- Perform or set up site security

The predominant paygrade is E-6, and 80 percent of the members hold the 5-skill level. Seventy percent of the members in this job are in the AFRC with the remaining members in the ANG.

IV. MANAGEMENT JOB (STG027). This job consists of 16 members who spend 46 percent of their time performing management and supervisory activities in Duty O. In addition, they spend 17 percent of their time performing training activities (Duty P). They average 147 tasks performed. Their job is limited in scope to the less technical tasks within the survey as these members are primarily responsible for the management of daily LFM activities, including training, supply, and administrative activities. Typical tasks performed by these incumbents include:

- Determine or establish work assignments or priorities
- Evaluate job or position descriptions
- Evaluate personnel for promotion, demotion, reclassification, or special awards
- Inspect personnel for compliance with military standards
- Determine training requirements
- Maintain training records or files
- Evaluate work schedules
- Counsel subordinates concerning personal matters
- Conduct self-inspections or self-assessments
- Conduct supervisory performance feedback sessions
- Write recommendations for awards or decorations
- Write performance reports or supervisory appraisals

The predominant paygrade is E-6, and 69 percent of the members in the Management Job are 7-skill levels. The members of this job are the most senior members of the identified clusters and jobs as they average 14 years' TICF and 16 years' TAFMS.

Comparison of Current Group Descriptions to Previous Study

The results of the specialty job analysis were compared to the previous OSR, dated April 1997. As shown in Table 5, the Liquid Fuel Systems Maintenance Cluster was identified in the previous survey as the General Maintenance Cluster. The General Maintenance Cluster identified in the current study was not identified in the 1997 survey. The Reserve Forces Readiness Job identified in the current study was referred to in the 1997 study as the Mobility and Contingency Cluster. Finally, the Management Job identified in the current study was listed in the 1997 study as the Supervision Cluster.

Summary

Career ladder structure analysis identified two clusters and two jobs: Liquid Fuel Systems Maintenance Cluster, General Maintenance Cluster, Reserve Forces Readiness Job, and Management Job. The core of the career ladder (Liquid Fuel Systems Maintenance Cluster) involves the performance of technical tasks associated with the maintenance and inspection of liquid fuel systems, including automatic valves and components. The General Maintenance Cluster performs a variety of technical tasks throughout the survey, including 34 percent of their time on general maintenance tasks. The Reserve Forces Readiness Job consists of ANG and AFRC members who spend the majority of their time performing mobility, contingency, and Prime BEEF activities. The Management Job contains the more senior members of the career ladder who spend most of their time performing management, supervisory, training, and supply tasks.

TABLE 3

RELATIVE PERCENT TIME SPENT ON DUTIES BY SPECIALTY JOBS AND CLUSTERS

DUTIES		Liquid Fuel Systems Maintenance Cluster (STG028) (N=156)	General Maintenance Cluster (STG014) (N=20)	Reserve Forces Readiness Job (STG040) (N=10)	Management Job (STG027) (N=16)
A	PERFORMING GENERAL MAINTENANCE ACTIVITIES	11	34	7	3
B	CLEANING, INSPECTING, OR MAINTAINING FUEL STORAGE TANKS	9	11	-	3
C	PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	5	6	-	4
D	MAINTAINING FUEL SYSTEMS	11	7	1	1
E	MAINTAINING AUTOMATIC VALVES AND COMPONENTS	10	5	1	3
F	MAINTAINING MANUAL VALVES AND COMPONENTS	4	2	2	-
G	MAINTAINING FUEL PUMPS	3	3	-	-
H	MAINTAINING PIPELINES AND PITS	6	7	1	1
I	MAINTAINING SERVICE STATION PUMP ASSEMBLIES	8	3	1	2
J	MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	4	4	-	-
K	PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	3	3	-	-
L	PERFORMING ELECTRICAL ACTIVITIES	4	1	-	-
M	PERFORMING PRIME BASE ENGINEER EMERGENCY FORCE (BEEF) ACTIVITIES	3	3	21	3
N	PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	6	6	42	6
O	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	7	1	9	46
P	PERFORMING TRAINING ACTIVITIES	3	1	8	17
Q	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	1	-	1	3
R	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	2	4	7

" - " indicates less than 1 percent

TABLE 4

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS AND CLUSTERS

	Liquid Fuel Systems Maintenance Cluster (STG028)	General Maintenance Cluster (STG014)	Reserve Forces Readiness Job (STG040)	Management Job (STG027)
NUMBER IN GROUP	156	20	10	16
PERCENT OF SAMPLE	70%	9%	5%	7%
PERCENT IN CONUS	75%	85%	100%	69%
SKILL-LEVEL DISTRIBUTION:				
3E432	31%	35%	0%	0%
3E452	48%	50%	80%	31%
3E472	21%	15%	20%	69%
ADDITIONAL INFORMATION				
PREDOMINANT GRADE	E-5	E-6	E-6	E-6
PERCENT SUPERVISING	40%	20%	40%	81%
AVERAGE NUMBER OF TASKS PERFORMED	300	66	89	147

TABLE 5

SPECIALTY JOB AND CLUSTER COMPARISONS
BETWEEN CURRENT SURVEY AND 1997 SURVEY

CURRENT SURVEY (N=224)	%	1997 SURVEY (N=309)	%
LIQUID FUEL SYSTEMS MAINTENANCE CLUSTER	70	GENERAL MAINTENANCE CLUSTER	72
GENERAL MAINTENANCE CLUSTER	9	*	
RESERVE FORCES READINESS JOB	5	MOBILITY AND CONTINGENCY CLUSTER	11
MANAGEMENT CLUSTER	7	SUPERVISION CLUSTER	11
NOT GROUPED	9	NOT GROUPED	6

" * " indicates no match in report

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with the analysis of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis identifies differences in tasks performed at the various skill levels. This information may then be used to evaluate how well career ladder documents, such as the AFMAN 36-2108, *Airman Classification,* Specialty Description and the Career Field Education and Training Plan (CFETP), reflect what career ladder personnel are actually doing in the field.

The distribution of skill-level groups *for the total survey sample* (AD, ANG, and AFRC members) across the career ladder jobs and clusters is displayed in Table 6, while Table 7 offers another perspective by displaying the relative percent time spent on each duty across skill-level groups. A typical pattern of progression is noted within the AFSC 3E4X2 career ladder. Personnel at the 3-skill level and 5-skill level work in the technical jobs of the career ladder and spend most of their time on technical tasks. As incumbents progress to the 7-skill level, they perform many more supervisory and training tasks but still spend 60 percent of their time performing the technical tasks of the career ladder.

TABLE 6

DISTRIBUTION OF DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS AND CLUSTERS
(PERCENT RESPONDING)

SPECIALTY JOBS		3E432 (N=57)	3E452 (N=106)	3E472 (N=61)
I.	LIQUID FUEL SYSTEMS MAINTENANCE CLUSTER	81	70	54
II.	GENERAL MAINTENANCE CLUSTER	12	10	5
III.	RESERVE FORCES READINESS JOB	0	8	3
IV.	MANAGEMENT JOB	0	5	18
VI.	NOT GROUPED	7	7	20

TABLE 7

RELATIVE PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS

DUTIES		3E432 (N=57)	3E452 (N=106)	3E472 (N=61)
A	PERFORMING GENERAL MAINTENANCE ACTIVITIES	15	14	10
B	CLEANING, INSPECTING, OR MAINTAINING FUEL STORAGE TANKS	9	8	6
C	PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	5	5	4
D	MAINTAINING FUEL SYSTEMS	12	8	7
E	MAINTAINING AUTOMATIC VALVES AND COMPONENTS	10	7	6
F	MAINTAINING MANUAL VALVES AND COMPONENTS	5	3	2
G	MAINTAINING FUEL PUMPS	3	3	2
H	MAINTAINING PIPELINES AND PITS	7	5	4
I	MAINTAINING SERVICE STATION PUMP ASSEMBLIES	8	6	4
J	MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	5	4	2
K	PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	4	2	1
L	PERFORMING ELECTRICAL ACTIVITIES	4	3	2
M	PERFORMING PRIME BASE ENGINEER EMERGENCY FORCE (BEEF) ACTIVITIES	3	4	3
N	PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	5	10	7
O	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	2	9	25
P	PERFORMING TRAINING ACTIVITIES	1	4	9
Q	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	-	1	2
R	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	1	4	4

" - " indicates less than 1 percent

AD Skill-Level Descriptions

The distribution of skill-level groups for the AD survey sample across the career ladder jobs and clusters is displayed in Table 8 and shows that the majority of the AD sample for all skill levels sampled perform tasks associated with the Liquid Fuel Systems Maintenance Cluster.

DAFSC 3E432 Representing 25 percent of the survey sample, these 56 airmen perform an average of 249 tasks. Table 9 reflects the percent time spent on duties by AD DAFSC 3E432 personnel. Members holding DAFSC 3E432 spend 95 percent of their time performing technical tasks in Duties A through N. Twenty-seven percent of their time is spent performing general LFM tasks of Duty A and maintaining fuel systems of Duty D. Representative tasks performed by these members are listed in Table 10.

DAFSC 3E452 The 74 members of this group account for 33 percent of the survey sample. They perform an average of 275 tasks, the largest number of tasks performed by 5-skill level members in the three service components. Table 9 provides a comparison of the relative time spent on duties at the 5-skill level. This table shows a slight decrease in the amount of time spent performing technical tasks in most duties and an increase in the number of personnel performing the supervisory tasks of Duty O. The DAFSC 3E452 members spend slightly more time maintaining service station pump assemblies (Duty I) compared to the DAFSC 3E432 members. The 5-skill level members spend the same relative amount of time performing environmental or safety activities (Duty C), maintaining fuel pumps (Duty G), performing electrical activities (Duty L), and performing mobility and contingency activities (Duty N) versus the 3-skill level members.

Table 11 lists representative tasks performed by these DAFSC 3E452 personnel. Table 12 reflects those tasks which best differentiate the 3-skill levels from the 5-skill levels. This table shows that over 20 percent more 3-skill levels perform six technical tasks primarily related to maintaining pipelines and pits compared to the number of 5-skill level members performing the same tasks. Table 12 also reveals that the 5-skill levels perform many supervisory and training tasks rarely performed at the 3-skill level.

DAFSC 3E472 These 35 members perform an average of 282 tasks and represent 16 percent of the survey sample. Table 9 reflects the percent time spent on duties by DAFSC 3E472 members and shows decreases in the amount of time spent by members performing the technical tasks in 13 out of 14 duty areas. Forty-five percent of their time is spent on nontechnical tasks involving management and supervision, training, administration, and supply. This is an increase of time spent performing nontechnical tasks of 25 percent compared to the 5-skill level members. They spend 29 percent of their time performing management and supervisory tasks.

Representative tasks performed by 7-skill level members are reflected in Table 13. Table 14 reflects tasks which best differentiate between 5- and 7-skill levels. This table clearly shows a higher percentage of 5-skill level members performing certain technical tasks in a variety of areas, including the maintenance of manual valves and fuel loading and off-loading equipment. The most significant difference in the performance of specific tasks between the AD 5-skill level and 7-skill level members is revealed in the management, supervisory, and training areas.

AD Skill-Level Analysis Summary

Progression in the Liquid Fuel Systems Maintenance career ladder follows a regular pattern of highly technical job focus at the 3-skill level with a broadening into supervision and management at the 5- and 7-skill levels. Three- and 5-skill level airmen perform many tasks in common, and both groups spend the majority of their time performing technical LFM tasks. The 5-skill level members, while performing similar technical tasks, perform some supervisory and management tasks. At the 7-skill level, members still perform a substantial number of technical tasks but demonstrate a strong shift toward supervisory functions.

TABLE 8

DISTRIBUTION OF AD DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS AND CLUSTERS
(PERCENT RESPONDING)

SPECIALTY JOBS		3E432 (N=56)	3E452 (N=74)	3E472 (N=35)
I.	LIQUID FUEL SYSTEMS MAINTENANCE CLUSTER	86	84	66
II.	GENERAL MAINTENANCE CLUSTER	13	3	0
III.	RESERVE FORCES READINESS JOB	0	0	0
IV.	MANAGEMENT JOB	0	7	20
VI.	NOT GROUPED	1	6	14

TABLE 9

RELATIVE PERCENT TIME SPENT ON DUTIES BY AD DAFSC 3E4X2 GROUPS

DUTIES		3E432 (N=56)	3E452 (N=74)	3E472 (N=35)
A	PERFORMING GENERAL MAINTENANCE ACTIVITIES	15	12	6
B	CLEANING, INSPECTING, OR MAINTAINING FUEL STORAGE TANKS	9	8	7
C	PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	5	5	4
D	MAINTAINING FUEL SYSTEMS	12	8	7
E	MAINTAINING AUTOMATIC VALVES AND COMPONENTS	10	8	6
F	MAINTAINING MANUAL VALVES AND COMPONENTS	5	4	2
G	MAINTAINING FUEL PUMPS	3	3	2
H	MAINTAINING PIPELINES AND PITS	7	6	4
I	MAINTAINING SERVICE STATION PUMP ASSEMBLIES	8	9	5
J	MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	5	4	3
K	PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	4	2	2
L	PERFORMING ELECTRICAL ACTIVITIES	4	4	2
M	PERFORMING PRIME BASE ENGINEER EMERGENCY FORCE (BEEF) ACTIVITIES	3	2	1
N	PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	5	5	4
O	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	2	10	29
P	PERFORMING TRAINING ACTIVITIES	1	5	10
Q	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	1	1	2
R	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	1	4	4

" - " indicates less than 1 percent

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY AD DAFSC 3E432 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=56)
A0024	Install or remove filter-separator elements	98
A0037	Replace nozzles	98
A0005	Clean work areas	96
C0097	Clean up fuel spills with absorbent materials	96
A0003	Clean hand tools	96
A0008	Cut gasket materials	96
A0039	Replace service station fuel hoses	93
A0041	Thread pipes	93
K0385	Drain filter separators	91
A0026	Manually bleed air off fuel systems	91
D0168	Install or remove pressure gauges	91
A0015	Ground portable equipment	89
E0228	Troubleshoot automatic valves	88
K0387	Drain pipelines	88
K0379	Blind flange open pipelines	88
A0028	Operationally inspect filter separators	86
D0173	Join pipes with bolted flanges	86
F0229	Adjust packing glands on manual valves	86
D0174	Join pipes with threaded fittings	84
I0341	Replace service station nozzles	84
I0313	Inspect service station fuel hoses	84
A0009	Cut pipes with hand tools	84
E0198	Adjust pressure-relief controls	84
L0411	Perform tag-out or lock-out procedures	82
A0040	Test vapor levels in enclosed areas	82
I0311	Calibrate service station pump dispensing unit meters	82
A0025	Install or remove strainer screens	82
E0199	Adjust rate-of-flow controls	82
E0227	Replace diaphragms	82
E0217	Repair or replace opening or closing speed control components	82
E0220	Repair or replace pressure-relief controls	82
E0203	Inspect valve position indicators (VPIs)	82
H0305	Replace flange gaskets	80
G0256	Operationally inspect fuel pumps	80
H0300	Pressure test pipelines using installed pumps	80
I0345	Replace service station pump hoses	80
F0235	Operationally inspect manual valves, other than check valves	80
E0196	Adjust opening or closing speed controls	80
E0219	Repair or replace pressure-reducing controls	80
J0357	Inspect hose connections	79
J0362	Install or remove quick disconnect couplings, such as kam-lock or drybreak	79

* Average Number of Tasks Performed - 249

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY AD DAFSC 3E452 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=74)
A0005	Clean work areas	97
A0003	Clean hand tools	95
A0039	Replace service station fuel hoses	92
E0228	Troubleshoot automatic valves	92
A0037	Replace nozzles	91
A0008	Cut gasket materials	91
A0024	Install or remove filter-separator elements	89
I0319	Operationally inspect service station pumps	88
J0357	Inspect hose connections	88
C0097	Clean up fuel spills with absorbent materials	88
A0041	Thread pipes	88
E0207	Operationally inspect automatic control valves or components	86
D0174	Join pipes with threaded fittings	85
B0054	Inspect air compressors or hoses	85
I0316	Operationally inspect service station dispensers	84
I0341	Replace service station nozzles	84
A0040	Test vapor levels in enclosed areas	84
I0345	Replace service station pump hoses	84
A0028	Operationally inspect filter separators	82
E0203	Inspect valve position indicators (VPIs)	82
E0200	Inspect automatic valve main valve bodies	82
E0198	Adjust pressure-relief controls	82
A0018	Inspect grounding cables, rods, or bonding devices	82
E0227	Replace diaphragms	82
I0313	Inspect service station fuel hoses	81
L0411	Perform tag-out or lock-out procedures	81
J0360	Inspect quick disconnect couplings, such as kam-lock or drybreak	81
A0021	Inspect product recovery systems	81
F0229	Adjust packing glands on manual valves	81
D0173	Join pipes with bolted flanges	81
A0009	Cut pipes with hand tools	80
A0015	Ground portable equipment	80
G0256	Operationally inspect fuel pumps	80
J0362	Install or remove quick disconnect couplings, such as kam-lock or drybreak	80
F0243	Repair or replace manual valves, other than check valves	80
A0025	Install or remove strainer screens	78
I0311	Calibrate service station pump dispensing unit meters	78
J0367	Operationally inspect emergency-stop switches	78
B0071	Interpret as-built drawings	77
F0235	Operationally inspect manual valves, other than check valves	77
K0385	Drain filter separators	77
A0019	Inspect loading fuel hoses	77

* Average Number of Tasks Performed - 275

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN AD AFSC 3E432 AND DAFSC 3E452 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		DAFSC 3E432 (N=56)	DAFSC 3E452 (N=74)	DIFFERENCE
H0307	Replace springs on pit lids	36	11	25
K0395	Stencil deactivated pumps, filter separators, meters, or storage tanks	52	27	25
H0272	Flush pipelines	54	31	22
N0508	Install or remove bladder tanks on portable or air-transportable fueling systems	46	24	22
H0283	Maintain pits	66	45	21
I0348	Replace service station pump shaft mechanical seals	52	31	21
P0659	Maintain training records or files	11	58	-47
O0556	Conduct self-inspections or self-assessments	21	66	-45
O0558	Conduct supervisory orientations for newly assigned personnel	4	47	-44
P0644	Counsel trainees on training progress	7	50	-43
O0572	Direct training activities	9	50	-41
P0643	Conduct on-the-job training (OJT)	20	61	-41
O0559	Conduct supervisory performance feedback sessions	2	41	-39
O0561	Counsel subordinates concerning personal matters	7	46	-39
R0700	Research equipment and parts for replacement	21	59	-38
O0570	Develop or establish work schedules	9	47	-38
P0664	Schedule personnel for training	5	42	-37
R0689	Initiate requisitions for equipment, tools, parts, or supplies	5	42	-37
O0551	Assign personnel to work areas or duty positions	11	47	-37
O0604	Interpret policies, directives, or procedures for subordinates	9	46	-37
O0603	Inspect personnel for compliance with military standards	9	46	-37
O0630	Write recommendations for awards or decorations	2	39	-37
O0601	Initiate actions required due to substandard performance of personnel	2	39	-37
P0655	Evaluate progress of trainees	9	45	-36
O0564	Determine or establish work assignments or priorities	14	50	-36

TABLE 13

REPRESENTATIVE TASKS PERFORMED BY AD DAFSC 3E472 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=35)
O0603	Inspect personnel for compliance with military standards	91
O0630	Write recommendations for awards or decorations	91
O0606	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	89
P0635	Attend Prime Base Engineering Emergency Force (BEEF) training	86
O0559	Conduct supervisory performance feedback sessions	86
O0561	Counsel subordinates concerning personal matters	86
O0592	Evaluate personnel for compliance with performance standards	83
O0593	Evaluate personnel for promotion, demotion, reclassification, or special awards	83
O0560	Coordinate maintenance of liquid fuel systems, other than tank cleaning, with appropriate agencies	83
O0625	Schedule work assignments or priorities	83
O0562	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	83
O0551	Assign personnel to work areas or duty positions	83
O0595	Evaluate safety or security programs	80
P0645	Determine training requirements	80
O0604	Interpret policies, directives, or procedures for subordinates	80
O0564	Determine or establish work assignments or priorities	80
P0644	Counsel trainees on training progress	80
P0643	Conduct on-the-job training (OJT)	80
P0654	Evaluate personnel to determine training needs	80
O0558	Conduct supervisory orientations for newly assigned personnel	80
O0596	Evaluate work schedules	77
B0071	Interpret as-built drawings	77
O0572	Direct training activities	77
O0601	Initiate actions required due to substandard performance of personnel	77
P0655	Evaluate progress of trainees	77
O0570	Develop or establish work schedules	77
H0280	Interpret mechanical schematics	77
O0585	Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) program	74
O0571	Direct administrative activities	74
O0629	Write performance reports or supervisory appraisals	74
P0661	Plan or schedule training	74
O0556	Conduct self-inspections or self-assessments	74
O0553	Attend military construction (MILCON) project progress meetings	74
P0664	Schedule personnel for training	74
O0598	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	74
O0580	Establish performance standards for subordinates	74
N0501	Don or doff chemical warfare personal protective clothing	71
O0582	Evaluate accident or incident reports	71

* Average Number of Tasks Performed - 282

TABLE 14

TASKS WHICH BEST DIFFERENTIATE BETWEEN AD DAFSC 3E452 AND DAFSC 3E472 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E452 (N=74)	3E472 (N=35)	DIFFERENCE
A0005	Clean work areas	97	66	32
F0234	Operationally inspect check valves	77	46	31
L0396	Clean electrical contacts	53	23	30
A0039	Replace service station fuel hoses	92	63	29
A0003	Clean hand tools	95	66	29
J0378	Replace hose protectors	57	29	28
A0025	Install or remove strainer screens	78	51	27
F0229	Adjust packing glands on manual valves	81	54	27
N0503	Fill sandbags	58	31	27
M0432	Construct berms or dikes	35	9	27
A0001	Bend copper tubing	74	49	26
A0028	Operationally inspect filter separators	82	57	25
J0357	Inspect hose connections	88	63	25
J0356	Hydrostatically pressure-test hoses	47	23	24
I0341	Replace service station nozzles	84	60	24
O0630	Write recommendations for awards or decorations	39	91	-52
O0631	Write replies to inspection reports	19	69	-50
O0593	Evaluate personnel for promotion, demotion, reclassification, or special awards	32	83	-50
O0628	Write job or position descriptions	18	66	-48
O0602	Initiate personnel action requests	20	69	-48
O0623	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	30	77	-47
O0553	Attend military construction (MILCON) project progress meetings	30	74	-45
O0607	Perform final acceptance of MILCON projects	12	57	-45
P0662	Prepare job qualification standards (JQSs)	15	60	-45
O0559	Conduct supervisory performance feedback sessions	41	86	-45
O0603	Inspect personnel for compliance with military standards	46	91	-45
O0595	Evaluate safety or security programs	36	80	-44
P0645	Determine training requirements	36	80	-44
O0574	Draft budget requirements	14	57	-44

ANG Skill-Level Descriptions

As of July 1999, a total of 201 ANG members were assigned to AFSC 3E4X2. A total of 182 disks were mailed to ANG personnel with 53 disks returned. The ANG sample is comprised of 34 members. A total of 19 disks could not be used.

Table 15 displays the distribution of skill-level groups for the ANG survey sample across the career ladder jobs and clusters. This table shows that majority of the 5-skill level members are identified within the General Maintenance Cluster while most of the ANG 7-skill level members perform tasks associated with the Liquid Fuel Systems Maintenance Cluster.

DAFSC 3E452 The 13 members of this group perform an average of 142 tasks which is the lowest average for the three service component 5-skill level members. Table 16 provides a comparison of the relative time spent on duties at the 5-skill level and shows that almost 88 percent of their relative time is spent performing the technical tasks of Duties A through N. This table also shows that ANG DAFSC 3E452 personnel spend 23 percent of their time performing general LFM tasks (Duty A) and 12 percent of their time performing mobility and contingency tasks (Duty N).

Table 17 lists representative tasks performed by these ANG DAFSC 3E452 personnel while Table 20 shows the relative percent time spent on the survey duty areas for DAFSC 3E452 members for all three service components. The ANG 5 skill-level members spend 12 percent more time performing Prime BEEF activities (Duty M) and mobility and contingency activities (Duty N) than their AD 5-skill level peers.

DAFSC 3E472 These 20 members perform an average of 142 tasks and represent 9 percent of the total survey sample. Table 16 reflects the percent time spent on duties by ANG DAFSC 3E472 members and shows decreases in the amount of time spent by members performing the tasks in 8 of the 14 technical duty areas compared to the ANG 5-skill level personnel. The 7-skill level members spend more of their time maintaining fuel systems (Duty D) and maintaining automatic valves and components (Duty E) compared to the ANG 5-skill level members. Twenty-nine percent of their time is spent on nontechnical tasks involving management and supervision, training, administration, and supply. This is an increase in time spent performing nontechnical tasks of almost 17 percent compared to the ANG 5-skill level members.

Representative tasks performed by ANG 7-skill level members are reflected in Table 18. Table 19 shows tasks that best differentiate between ANG 5- and 7-skill levels. This table clearly shows much more time being spent on specific technical tasks, such as draining fuel storage tanks and draining pipelines, at the 5-skill level. The ANG DAFSC 3E472 members, like their AD counterparts, spend more time than the 5-skill level members performing certain management and supervisory tasks, but they also spend more time performing several technical tasks, including adjusting rate-of-flow controls and inspecting automatic valve main valve bodies.

Table 21 displays the relative time spent on the duty areas for DAFSC 3E472 members by service component. The most significant difference between the tasks performed by ANG 7-skill level members and the AD 7-skill level members is the amount of time spent performing general LFM tasks. The ANG DAFSC 3E472 members spend 23 percent of their time performing general LFM tasks while the AD DAFSC 3E472 members spend 12 percent of their time on similar activities. As a result, the AD members spend more relative time than the ANG members performing specific LFM maintenance, such as maintaining automatic valves and components (Duty E) and service station pump assemblies (Duty I).

ANG Skill-Level Analysis Summary

Progression for ANG members in the Liquid Fuel Systems Maintenance career ladder follows a normal pattern with a concentration on technical tasks at the 5-skill level and an increase in the performance of management and supervisory, training, administrative, and supply activities at the 7-skill level. The ANG DAFSC 3E4X2 members, however, perform more AFSC-specific technical tasks as they progress through the career ladder compared to the progression for AD members.

TABLE 15

DISTRIBUTION OF ANG DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS AND CLUSTERS
(PERCENT RESPONDING)

SPECIALTY JOBS	3E452 (N=13)	3E472 (N=20)
I. LIQUID FUEL SYSTEMS MAINTENANCE CLUSTER	31	40
II. GENERAL MAINTENANCE CLUSTER	46	15
III. RESERVE FORCES READINESS JOB	8	10
IV. MANAGEMENT JOB	0	10
VI. NOT GROUPED	15	25

TABLE 16

RELATIVE PERCENT TIME SPENT ON DUTIES BY ANG DAFSC 3E4X2 GROUPS

DUTIES		3E452 (N=13)	3E472 (N=20)
A	PERFORMING GENERAL MAINTENANCE ACTIVITIES	23	16
B	CLEANING, INSPECTING, OR MAINTAINING FUEL STORAGE TANKS	8	5
C	PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	7	4
D	MAINTAINING FUEL SYSTEMS	7	8
E	MAINTAINING AUTOMATIC VALVES AND COMPONENTS	4	6
F	MAINTAINING MANUAL VALVES AND COMPONENTS	3	3
G	MAINTAINING FUEL PUMPS	2	2
H	MAINTAINING PIPELINES AND PITS	4	3
I	MAINTAINING SERVICE STATION PUMP ASSEMBLIES	3	2
J	MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	3	2
K	PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	2	1
L	PERFORMING ELECTRICAL ACTIVITIES	2	2
M	PERFORMING PRIME BASE ENGINEER EMERGENCY FORCE (BEEF) ACTIVITIES	7	5
N	PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	12	12
O	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	4	17
P	PERFORMING TRAINING ACTIVITIES	6	8
Q	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	-	1
R	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2	3

" - " indicates less than 1 percent

TABLE 17

REPRESENTATIVE TASKS PERFORMED BY ANG DAFSC 3E452 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=13)
A0004	Clean strainer screens	92
A0008	Cut gasket materials	92
A0003	Clean hand tools	85
A0024	Install or remove filter-separator elements	85
A0018	Inspect grounding cables, rods, or bonding devices	77
A0017	Inspect dikes or dike basins	77
C0097	Clean up fuel spills with absorbent materials	77
A0019	Inspect loading fuel hoses	69
N0548	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	69
A0025	Install or remove strainer screens	69
N0535	Perform self-aid and buddy-care activities	69
K0385	Drain filter separators	69
N0506	Inspect mobility bags or kits	69
A0028	Operationally inspect filter separators	62
H0305	Replace flange gaskets	62
N0505	Inspect chemical warfare personal protective clothing	62
A0026	Manually bleed air off fuel systems	62
A0015	Ground portable equipment	62
A0041	Thread pipes	62
E0206	Install or remove flow clean strainers	62
C0112	Inspect fire extinguishers	54
G0255	Lubricate pump motors	54
N0501	Don or doff chemical warfare personal protective clothing	54
A0016	Ground tank cars, trucks, or other vehicles	54
B0060	Inspect manhole covers for leaks	54
A0038	Replace off-loading fuel hoses	54
A0014	Flare copper tubing	54
A0039	Replace service station fuel hoses	54
A0037	Replace nozzles	54
D0173	Join pipes with bolted flanges	54
A0012	Cut stencils	54
A0001	Bend copper tubing	54
C0113	Inspect or maintain portable eye washes	46
D0186	Paint identification markings on tanks or pipelines	46
N0536	Prepare equipment for deployments	46
A0020	Inspect off-loading fuel hoses	46
N0500	Dig trenches	46
R0690	Inventory equipment, tools, parts, or supplies	46
D0174	Join pipes with threaded fittings	46
M0464	Operate RRR equipment	46
J0368	Operationally inspect truck-fill stands	46
M0445	Identify and report suspected unexploded ordnance (UXO)	46
D0154	Inspect aboveground tanks	46
K0387	Drain pipelines	46

* Average Number of Tasks Performed - 114

TABLE 18

REPRESENTATIVE TASKS PERFORMED BY ANG DAFSC 3E472 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=20)
A0003	Clean hand tools	70
N0548	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	70
A0041	Thread pipes	70
A0008	Cut gasket materials	70
A0005	Clean work areas	65
A0024	Install or remove filter-separator elements	65
A0004	Clean strainer screens	65
C0097	Clean up fuel spills with absorbent materials	60
A0018	Inspect grounding cables, rods, or bonding devices	60
A0028	Operationally inspect filter separators	60
A0025	Install or remove strainer screens	60
A0015	Ground portable equipment	60
A0012	Cut stencils	60
N0506	Inspect mobility bags or kits	55
O0556	Conduct self-inspections or self-assessments	55
O0606	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	55
A0020	Inspect off-loading fuel hoses	55
A0019	Inspect loading fuel hoses	55
P0643	Conduct on-the-job training (OJT)	55
B0060	Inspect manhole covers for leaks	55
D0154	Inspect aboveground tanks	55
A0017	Inspect dikes or dike basins	55
A0037	Replace nozzles	55
N0535	Perform self-aid and buddy-care activities	55
A0013	Fabricate stencils	55
D0168	Install or remove pressure gauges	55
P0659	Maintain training records or files	50
N0501	Don or doff chemical warfare personal protective clothing	50
O0555	Conduct safety inspections of equipment or facilities	50
P0635	Attend Prime Base Engineering Emergency Force (BEEF) training	50
O0570	Develop or establish work schedules	50
A0032	Perform corrosion control on exterior metal surfaces	50
A0001	Bend copper tubing	50
A0022	Install or remove bonding devices	50
G0256	Operationally inspect fuel pumps	50
A0026	Manually bleed air off fuel systems	50
R0690	Inventory equipment, tools, parts, or supplies	45
O0569	Develop or establish work methods or procedures	45
O0561	Counsel subordinates concerning personal matters	45
J0368	Operationally inspect truck-fill stands	45
M0427	Assemble AM-2 matting	45

* Average Number of Tasks Performed - 142

TABLE 19

TASKS WHICH BEST DIFFERENTIATE BETWEEN ANG DAFSC 3E452 AND DAFSC 3E472 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E452 (N=13)	3E472 (N=20)	DIFFERENCE
K0386	Drain fuel storage tanks	54	15	39
A0005	Clean work areas	100	65	35
B0044	Clean tank cleaning equipment	46	15	31
A0004	Clean strainer screens	92	65	27
N0505	Inspect chemical warfare personal protective clothing	62	35	27
K0387	Drain pipelines	46	20	26
F0240	Overhaul globe valves	46	20	26
K0385	Drain filter separators	69	45	24
B0088	Replace manhole covers	38	15	23
A0008	Cut gasket materials	92	70	22
A0017	Inspect dikes or dike basins	77	55	22
B0043	Clean protective clothing or equipment, other than chemical warfare	46	25	21
N0500	Dig trenches	46	25	21
O0556	Conduct self-inspections or self-assessments	8	55	-47
O0555	Conduct safety inspections of equipment or facilities	8	50	-42
O0561	Counsel subordinates concerning personal matters	8	45	-37
E0199	Adjust rate-of-flow controls	15	50	-35
E0200	Inspect automatic valve main valve bodies	15	50	-35
D0167	Install or remove meter registers or counters	15	50	-35
O0570	Develop or establish work schedules	15	50	-35
D0192	Repair meter registers or counters	-	35	-35
P0643	Conduct on-the-job training (OJT)	23	55	-32
D0168	Install or remove pressure gauges	23	55	-32
B0071	Interpret as-built drawings	8	40	-32
H0308	Troubleshoot pipeline malfunctions	8	40	-32
O0551	Assign personnel to work areas or duty positions	8	40	-32

" - " indicates less than 1 percent

TABLE 20

RELATIVE PERCENT TIME SPENT ON DUTIES BY DAFSC 3E452 GROUPS

DUTIES		AD (N=74)	ANG (N=13)	AFRC (N=19)
A	PERFORMING GENERAL MAINTENANCE ACTIVITIES	12	23	12
B	CLEANING, INSPECTING, OR MAINTAINING FUEL STORAGE TANKS	8	8	6
C	PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	5	7	3
D	MAINTAINING FUEL SYSTEMS	8	7	5
E	MAINTAINING AUTOMATIC VALVES AND COMPONENTS	8	4	5
F	MAINTAINING MANUAL VALVES AND COMPONENTS	4	3	3
G	MAINTAINING FUEL PUMPS	3	2	2
H	MAINTAINING PIPELINES AND PITS	6	4	2
I	MAINTAINING SERVICE STATION PUMP ASSEMBLIES	9	3	3
J	MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	4	3	2
K	PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	2	2	1
L	PERFORMING ELECTRICAL ACTIVITIES	4	2	2
M	PERFORMING PRIME BASE ENGINEER EMERGENCY FORCE (BEEF) ACTIVITIES	2	7	12
N	PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	5	12	29
O	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	10	4	6
P	PERFORMING TRAINING ACTIVITIES	5	6	3
Q	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	1	-	1
R	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	4	2	3

" - " indicates less than 1 percent

TABLE 21

RELATIVE PERCENT TIME SPENT ON DUTIES BY DAFSC 3E472 GROUPS

DUTIES		AD (N=35)	ANG (N=20)	AFRC (N=6)
A	PERFORMING GENERAL MAINTENANCE ACTIVITIES	12	23	12
B	CLEANING, INSPECTING, OR MAINTAINING FUEL STORAGE TANKS	8	8	6
C	PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	5	7	3
D	MAINTAINING FUEL SYSTEMS	8	7	5
E	MAINTAINING AUTOMATIC VALVES AND COMPONENTS	8	4	5
F	MAINTAINING MANUAL VALVES AND COMPONENTS	4	3	3
G	MAINTAINING FUEL PUMPS	3	2	2
H	MAINTAINING PIPELINES AND PITS	6	4	2
I	MAINTAINING SERVICE STATION PUMP ASSEMBLIES	9	3	3
J	MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	4	3	2
K	PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	2	2	1
L	PERFORMING ELECTRICAL ACTIVITIES	4	2	2
M	PERFORMING PRIME BASE ENGINEER EMERGENCY FORCE (BEEF) ACTIVITIES	2	7	12
N	PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	5	12	29
O	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	10	4	6
P	PERFORMING TRAINING ACTIVITIES	5	6	3
Q	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	1	-	1
R	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	4	2	3

" - " indicates less than 1 percent

AFRC Skill-Level Descriptions

As of July 1999, a total of 83 AFRC members were assigned to AFSC 3E4X2. A total of 68 disks were mailed to AFRC personnel with 34 disks returned. Out of the 34 returned disks, a total of 9 disks could not be used. As a result, the AFRC sample is comprised of 25 members.

The distribution of skill-level groups for the AFRC survey sample across the career ladder jobs and clusters is displayed in Table 22. This table shows a fairly even distribution of the 5-skill level members within the Liquid Fuel Systems Maintenance Cluster and the Reserve Forces Job. One-third of the AFRC 7-skill level members are in the Liquid Fuel Systems Maintenance Cluster with another 33 percent in the Management Job.

DAFSC 3E452 The 19 members of this group account for 8 percent of the total survey sample. Table 23 provides a comparison of the relative time spent on duties at the 5-skill level and reveals that the AFRC DAFSC 3E452 members are spending 29 percent of their time performing mobility and contingency activities (Duty N). Eighty-seven percent of their time is spent performing technical tasks.

Table 24 lists some of the 135 tasks performed on average by the highest percentage of AFRC DAFSC 3E452 personnel. Table 20 reveals that compared to their AD peers, the AFRC 5-skill level members spend less relative time performing the technical tasks in 11 of the 14 technical duty areas. The AFRC personnel spend 24 percent more time performing mobility and contingency activities than the AD 5-skill level members and 17 percent more time on those activities than the ANG 5-skill level members.

DAFSC 3E472 These 6 members perform an average of 190 tasks. Table 23 reflects the percent time spent on duties by AFRC DAFSC 3E472 members and a pattern very similar to the time spent by AFRC 5-skill level members. The AFRC 7-skill levels spend more time than the 5-skill level members performing general LFM tasks (Duty A), maintaining service station pump assemblies (Duty I), performing fuel systems deactivation or decommissioning activities (Duty K), and performing electrical activities (Duty L). The AFRC 7-skill level members also spend 37 percent of their time performing management and supervisory, training, administrative, and supply activities. This is an increase in time spent performing nontechnical tasks of 24 percent compared to the AFRC 5-skill level members.

Representative tasks performed by AFRC 7-skill level members are reflected in Table 25. Table 26 reflects tasks which best differentiate between 5- and 7-skill levels. The AFRC 5-skill level members are performing many technical LFM tasks and mobility and contingency tasks performed by a much smaller percentage of AFRC 7-skill level members, such as performing explosive ordnance reconnaissance, refueling tent heaters, and repairing or replacing manual valves, other than check valves. Table 26 also clearly shows a significantly higher devotion to management, supervisory, and training activities at the 7-skill level than the 5-skill level.

Table 21 shows that compared to the ANG 7-skill level members, the AFRC 7-skill level members spend slightly more time maintaining service station pump assemblies (Duty I),

performing fuel systems deactivation or decommissioning activities (Duty K), performing electrical activities (Duty L), and performing Prime BEEF activities (Duty M). The AFRC 7-skill level members also spend 8 percent more time than their ANG counterparts on the nontechnical tasks in the survey. The AFRC 7-skill level members spend less time performing maintenance on specific liquid fuel systems compared to the AD 7-skill level members while the same AFRC members spend four times as much of their relative time performing Prime BEEF, mobility, and contingency activities.

AFRC Skill-Level Analysis Summary

Career ladder progression for AFRC members in DAFSC 3E4X2 follows a regular pattern. The 5-skill levels spend 87 percent of their time performing technical tasks versus 63 percent of the time spent on similar technical tasks at the 7-skill level. The distinction between the tasks performed by the two skill levels is greater among the AFRC members compared to the distinction between the same skill levels within the AD and ANG components. The AFRC DAFSC 3E472 members are performing a large number of management, supervisory, and training tasks that are being performed by a much smaller number of 5-skill level members.

TABLE 22

DISTRIBUTION OF AFRC DAFSC GROUP MEMBERS ACROSS SPECIALTY JOBS AND CLUSTERS
(PERCENT RESPONDING)

SPECIALTY JOBS	3E452 (N=19)	3E472 (N=6)
I. LIQUID FUEL SYSTEMS MAINTENANCE CLUSTER	42	34
II. GENERAL MAINTENANCE CLUSTER	11	0
III. RESERVE FORCES READINESS JOB	36	0
IV. MANAGEMENT JOB	0	33
VI. NOT GROUPED	11	33

TABLE 23

RELATIVE PERCENT TIME SPENT ON DUTIES BY AFRC DAFSC 3E4X2 GROUPS

DUTIES		3E452 (N=19)	3E472 (N=6)
A	PERFORMING GENERAL MAINTENANCE ACTIVITIES	12	15
B	CLEANING, INSPECTING, OR MAINTAINING FUEL STORAGE TANKS	6	4
C	PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	3	3
D	MAINTAINING FUEL SYSTEMS	5	3
E	MAINTAINING AUTOMATIC VALVES AND COMPONENTS	5	2
F	MAINTAINING MANUAL VALVES AND COMPONENTS	3	1
G	MAINTAINING FUEL PUMPS	2	1
H	MAINTAINING PIPELINES AND PITS	2	3
I	MAINTAINING SERVICE STATION PUMP ASSEMBLIES	3	4
J	MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	2	2
K	PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	1	2
L	PERFORMING ELECTRICAL ACTIVITIES	2	3
M	PERFORMING PRIME BASE ENGINEER EMERGENCY FORCE (BEEF) ACTIVITIES	12	9
N	PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	29	11
O	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	6	24
P	PERFORMING TRAINING ACTIVITIES	3	8
Q	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	1	1
R	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	3	4

" - " indicates less than 1 percent

TABLE 24

REPRESENTATIVE TASKS PERFORMED BY AFRC DAFSC 3E452 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=19)
N0548	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	84
N0526	Perform chemical warfare agent decontamination procedures	84
A0005	Clean work areas	84
A0003	Clean hand tools	84
N0505	Inspect chemical warfare personal protective clothing	79
N0525	Perform camp security	79
N0535	Perform self-aid and buddy-care activities	79
N0524	Perform camouflage procedures	79
A0008	Cut gasket materials	79
N0501	Don or doff chemical warfare personal protective clothing	74
N0504	Identify chemical warfare agents	74
N0529	Perform explosive ordnance reconnaissance	74
N0527	Perform cover and concealment techniques for work party security	74
A0014	Flare copper tubing	74
N0506	Inspect mobility bags or kits	68
N0523	Participate in convoy exercises	68
N0503	Fill sandbags	68
M0454	Lay AM-2 matting	68
M0445	Identify and report suspected unexploded ordnance (UXO)	68
N0534	Perform RRRs	63
A0041	Thread pipes	63
C0097	Clean up fuel spills with absorbent materials	63
A0007	Cut copper tubing	63
A0001	Bend copper tubing	63
N0536	Prepare equipment for deployments	58
A0009	Cut pipes with hand tools	58
M0447	Inspect and report base damages	58
A0015	Ground portable equipment	58
A0017	Inspect dikes or dike basins	58
A0024	Install or remove filter-separator elements	58
E0206	Install or remove flow clean strainers	58
M0480	Set up or tear down bare base structures	53
N0540	Refuel tent heaters	53
N0531	Perform or set up site security	53
R0690	Inventory equipment, tools, parts, or supplies	53
N0530	Perform hardened facility activities	53
M0436	Construct field latrines	53
M0427	Assemble AM-2 matting	53
M0437	Construct field utility systems	53
A0037	Replace nozzles	53
N0484	Assemble rapid utility repair kits, such as RURK Is or RURK IIs	53
A0004	Clean strainer screens	53

* Average Number of Tasks Performed - 135

TABLE 25

REPRESENTATIVE TASKS PERFORMED BY AFRC DAFSC 3E472 PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=6)
O0570	Develop or establish work schedules	83
O0554	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	83
O0629	Write performance reports or supervisory appraisals	83
O0572	Direct training activities	83
A0015	Ground portable equipment	83
O0569	Develop or establish work methods or procedures	83
A0024	Install or remove filter-separator elements	83
A0018	Inspect grounding cables, rods, or bonding devices	83
A0005	Clean work areas	83
A0025	Install or remove strainer screens	83
N0506	Inspect mobility bags or kits	83
A0021	Inspect product recovery systems	83
N0535	Perform self-aid and buddy-care activities	83
A0004	Clean strainer screens	83
N0548	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	83
C0112	Inspect fire extinguishers	83
N0503	Fill sandbags	83
R0689	Initiate requisitions for equipment, tools, parts, or supplies	67
O0559	Conduct supervisory performance feedback sessions	67
O0558	Conduct supervisory orientations for newly assigned personnel	67
O0551	Assign personnel to work areas or duty positions	67
O0561	Counsel subordinates concerning personal matters	67
P0645	Determine training requirements	67
P0654	Evaluate personnel to determine training needs	67
P0644	Counsel trainees on training progress	67
O0564	Determine or establish work assignments or priorities	67
O0606	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	67
P0655	Evaluate progress of trainees	67
O0604	Interpret policies, directives, or procedures for subordinates	67
P0643	Conduct on-the-job training (OJT)	67
O0580	Establish performance standards for subordinates	67
O0555	Conduct safety inspections of equipment or facilities	67
O0581	Establish procedures for accountability of equipment, tools, parts, or supplies	67
A0037	Replace nozzles	67
A0028	Operationally inspect filter separators	67
O0603	Inspect personnel for compliance with military standards	67
P0636	Attend skill-level upgrade training	67
A0003	Clean hand tools	67
N0534	Perform RRRs	67
A0008	Cut gasket materials	67
M0454	Lay AM-2 matting	67
A0017	Inspect dikes or dike basins	67

* Average Number of Tasks Performed - 190

TABLE 26

TASKS WHICH BEST DIFFERENTIATE BETWEEN AFRC DAFSC 3E452 AND DAFSC 3E472 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3E452 (N=19)	3E472 (N=6)	DIFFERENCE
N0529	Perform explosive ordnance reconnaissance	74	33	40
A0002	Bend stainless steel tubing	37	-	37
N0540	Refuel tent heaters	53	17	36
E0213	Repair or replace dead man controls	32	-	32
F0243	Repair or replace manual valves, other than check valves	47	17	31
A0007	Cut copper tubing	63	33	30
A0001	Bend copper tubing	63	33	30
N0524	Perform camouflage procedures	79	50	29
N0525	Perform camp security	79	50	29
E0218	Repair or replace powertrols	26	-	26
E0226	Repair or replace VPIs	26	-	26
L0408	Perform amperage tests	26	-	26
O0572	Direct training activities	5	83	-78
O0629	Write performance reports or supervisory appraisals	11	83	-73
O0570	Develop or establish work schedules	11	83	-73
O0569	Develop or establish work methods or procedures	11	83	-73
O0554	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	21	83	-62
O0566	Develop organizational or functional charts	5	67	-61
A0021	Inspect product recovery systems	26	83	-57
P0654	Evaluate personnel to determine training needs	11	67	-56
P0645	Determine training requirements	11	67	-56
P0644	Counsel trainees on training progress	11	67	-56
R0689	Initiate requisitions for equipment, tools, parts, or supplies	11	67	-56
O0604	Interpret policies, directives, or procedures for subordinates	11	67	-56
P0655	Evaluate progress of trainees	11	67	-56

" - " indicates less than 1 percent

Comparative Analysis of DAFSC Groups

As discussed in their respective sections, AD, ANG, and AFRC DAFSC groups were examined and reported separately. A common theme became evident across all DAFSC groups, however, in that typical career ladder progression is evident across all three service components. At the 5-skill level across all component groups, members are performing mostly technical tasks. The 7-skill level groups expanded their workload to include supervisory, management, and training tasks as they are responsible for the day-today management of LFM activities.

Further analysis of the DAFSC groups for the three service components revealed that the AD members of this career ladder spend slightly more time performing management and supervisory tasks at the 5- and 7-skill levels than the AFRC members do. The distinction between the time spent performing management and supervisory activities at the 5-skill level and 7-skill level is greater between the AD and ANG members. In addition, the AD members perform a larger number of tasks with the AD 5-skill levels averaging over twice as many tasks as the ANG and AFRC 5-skill levels. The AD DAFSC 3E472 members also perform many more tasks than the ANG and AFRC 7-skill level members although the difference is not as significant. The most noticeable difference in task performance between the three components within the technical areas is in the time spent performing Prime BEEF, mobility, and contingency activities. The AFRC members devote much more time to these specific areas than their AD and ANG counterparts.

TRAINING ANALYSIS

Occupational survey data are one of many sources of information that can be used to assist in the development of a training program relevant to the needs of personnel in their first enlistment. Factors which may be used in evaluating training include the overall description of the work being performed by first-job or first-enlistment personnel and their overall distribution across career ladder jobs, percentages of first-job (1–24 months' TAFMS) or first-enlistment (1–48 months' TAFMS) members performing specific tasks, as well as TE and TD ratings (previously explained in the **SURVEY METHODOLOGY** section).

First-Job Personnel

This study has 25 members in their first-job assignment (1–24 months' TAFMS), representing 11 percent of the survey sample. Table 27 displays the relative time spent on duties by first-job personnel. As seen in this table, first-job personnel spend 17 percent of their time performing the general LFM tasks (Duty A) and 11 percent of their time maintaining fuel systems (Duty D). They also spend 11 percent of their time maintaining automatic valves and components (Duty E). Table 28 lists representative tasks performed by these first-job personnel and reflects the technical nature of the job these newly assigned personnel perform.

First-Enlistment Personnel

The 67 members in their first-enlistment represent 30 percent of the total survey sample. Figure 2 reflects the distribution of first-enlistment personnel within the career ladder. Table 29 displays the relative percent of time spent on duties by first-enlistment personnel. These personnel spend 15 percent of their time performing the general LFM tasks of Duty A and 11 percent of their time maintaining fuel systems of Duty D. Representative tasks performed by first-enlistment personnel are displayed in Table 30. Table 31 reflects the equipment or vehicles operated or maintained by more than 60 percent of the first-enlistment respondents.

TABLE 27

RELATIVE PERCENT TIME SPENT ON DUTIES BY FIRST-JOB PERSONNEL (1–24 MONTHS' TAFMS) (N=25)

DUTIES		PERCENT TIME SPENT
A	PERFORMING GENERAL MAINTENANCE ACTIVITIES	17
B	CLEANING, INSPECTING, OR MAINTAINING FUEL STORAGE TANKS	7
C	PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	4
D	MAINTAINING FUEL SYSTEMS	11
E	MAINTAINING AUTOMATIC VALVES AND COMPONENTS	11
F	MAINTAINING MANUAL VALVES AND COMPONENTS	4
G	MAINTAINING FUEL PUMPS	3
H	MAINTAINING PIPELINES AND PITS	7
I	MAINTAINING SERVICE STATION PUMP ASSEMBLIES	8
J	MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	5
K	PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	5
L	PERFORMING ELECTRICAL ACTIVITIES	5
M	PERFORMING PRIME BASE ENGINEER EMERGENCY FORCE (BEEF) ACTIVITIES	3
N	PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	6
O	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	1
P	PERFORMING TRAINING ACTIVITIES	-
Q	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	-
R	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2

" - " indicates less than 1 percent

TABLE 28

REPRESENTATIVE TASKS PERFORMED BY AFSC 3E4X2
FIRST-JOB PERSONNEL (1–24 MONTHS' TAFMS)

TASKS		PERCENT MEMBERS PERFORMING (N=25)
K0385	Drain filter separators	100
A0024	Install or remove filter-separator elements	100
A0005	Clean work areas	96
C0097	Clean up fuel spills with absorbent materials	96
A0003	Clean hand tools	96
A0008	Cut gasket materials	96
A0037	Replace nozzles	92
L0411	Perform tag-out or lock-out procedures	88
A0039	Replace service station fuel hoses	88
A0026	Manually bleed air off fuel systems	88
A0041	Thread pipes	88
K0387	Drain pipelines	88
E0228	Troubleshoot automatic valves	84
D0174	Join pipes with threaded fittings	84
K0379	Blind flange open pipelines	84
F0229	Adjust packing glands on manual valves	84
I0341	Replace service station nozzles	80
D0173	Join pipes with bolted flanges	80
A0009	Cut pipes with hand tools	80
E0223	Repair or replace solenoids	80
A0015	Ground portable equipment	76
D0168	Install or remove pressure gauges	76
J0357	Inspect hose connections	76
I0345	Replace service station pump hoses	76
A0028	Operationally inspect filter separators	76
K0386	Drain fuel storage tanks	76
E0217	Repair or replace opening or closing speed control components	76
E0227	Replace diaphragms	76
A0025	Install or remove strainer screens	76
A0014	Flare copper tubing	76
A0040	Test vapor levels in enclosed areas	76
A0031	Operationally inspect product recovery systems	76
A0007	Cut copper tubing	76
F0243	Repair or replace manual valves, other than check valves	76
E0199	Adjust rate-of-flow controls	72
E0196	Adjust opening or closing speed controls	72
I0319	Operationally inspect service station pumps	72
E0200	Inspect automatic valve main valve bodies	72
E0209	Repair or replace auxiliary check valves	72
J0362	Install or remove quick disconnect couplings, such as kam-lock or drybreak	68

* Average Number of Tasks Performed – 201

DISTRIBUTION OF 3E4X2 FIRST-ENLISTMENT PERSONNEL ACROSS SPECIALTY JOBS AND CLUSTERS (N = 67)

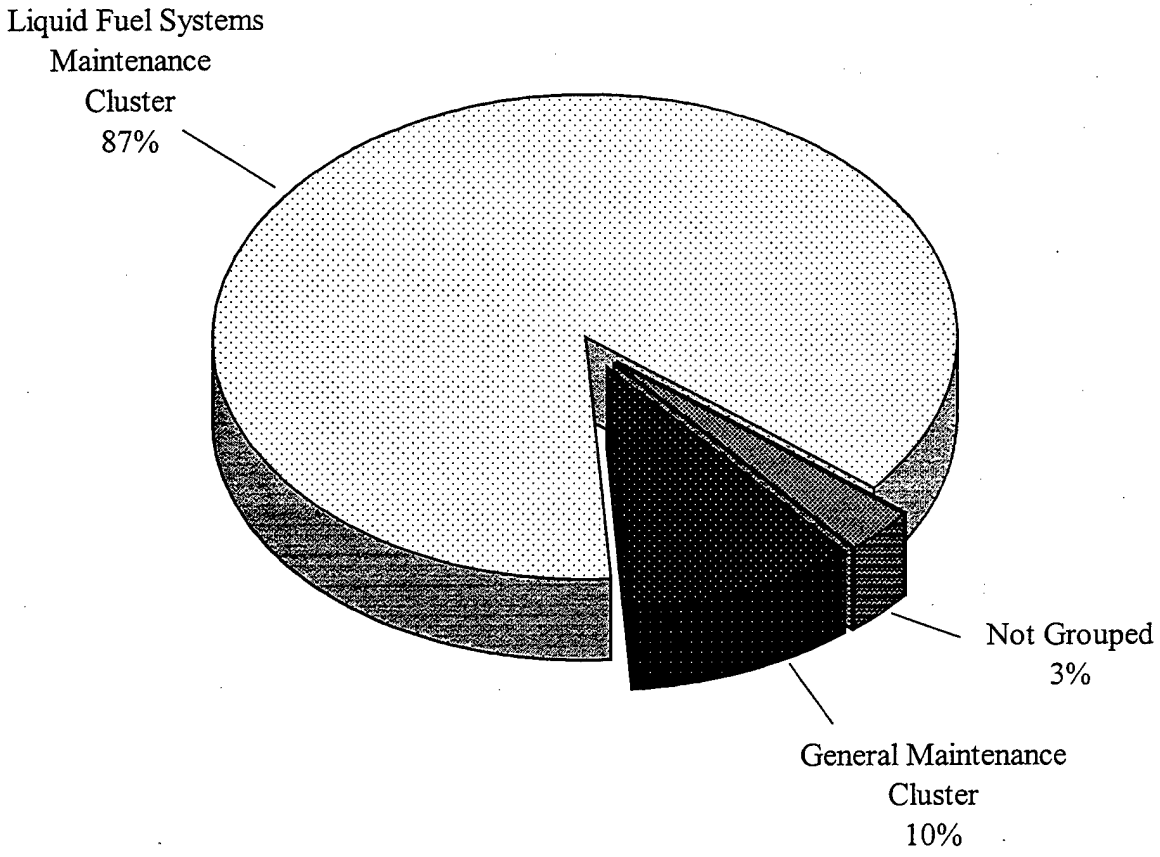

FIGURE 2

TABLE 29

RELATIVE PERCENT TIME SPENT ON DUTIES BY FIRST-ENLISTMENT PERSONNEL (N=67)

	DUTIES	PERCENT TIME SPENT
A	PERFORMING GENERAL MAINTENANCE ACTIVITIES	15
B	CLEANING, INSPECTING, OR MAINTAINING FUEL STORAGE TANKS	8
C	PERFORMING ENVIRONMENTAL OR SAFETY ACTIVITIES	5
D	MAINTAINING FUEL SYSTEMS	11
E	MAINTAINING AUTOMATIC VALVES AND COMPONENTS	10
F	MAINTAINING MANUAL VALVES AND COMPONENTS	4
G	MAINTAINING FUEL PUMPS	3
H	MAINTAINING PIPELINES AND PITS	7
I	MAINTAINING SERVICE STATION PUMP ASSEMBLIES	9
J	MAINTAINING FUEL LOADING OR OFF-LOADING EQUIPMENT	5
K	PERFORMING FUEL SYSTEMS DEACTIVATION OR DECOMMISSIONING ACTIVITIES	4
L	PERFORMING ELECTRICAL ACTIVITIES	4
M	PERFORMING PRIME BASE ENGINEER EMERGENCY FORCE (BEEF) ACTIVITIES	3
N	PERFORMING MOBILITY AND CONTINGENCY ACTIVITIES	6
O	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	2
P	PERFORMING TRAINING ACTIVITIES	1
Q	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER (TO) SYSTEM ACTIVITIES	-
R	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	2

" - " indicates less than 1 percent

TABLE 30

REPRESENTATIVE TASKS PERFORMED BY AFSC 3E4X2
FIRST-ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=67)
A0005	Clean work areas	97
A0024	Install or remove filter-separator elements	97
C0097	Clean up fuel spills with absorbent materials	97
A0003	Clean hand tools	97
A0008	Cut gasket materials	97
A0037	Replace nozzles	96
A0039	Replace service station fuel hoses	94
A0041	Thread pipes	93
K0385	Drain filter separators	91
A0026	Manually bleed air off fuel systems	91
E0228	Troubleshoot automatic valves	88
A0015	Ground portable equipment	87
D0173	Join pipes with bolted flanges	87
F0229	Adjust packing glands on manual valves	87
K0379	Blind flange open pipelines	87
I0341	Replace service station nozzles	85
D0174	Join pipes with threaded fittings	85
K0387	Drain pipelines	85
A0028	Operationally inspect filter separators	84
I0345	Replace service station pump hoses	84
L0411	Perform tag-out or lock-out procedures	84
I0313	Inspect service station fuel hoses	84
D0168	Install or remove pressure gauges	84
A0025	Install or remove strainer screens	84
A0009	Cut pipes with hand tools	84
E0198	Adjust pressure-relief controls	84
J0357	Inspect hose connections	82
I0319	Operationally inspect service station pumps	82
A0040	Test vapor levels in enclosed areas	82
E0227	Replace diaphragms	82
E0203	Inspect valve position indicators (VPIs)	82
I0316	Operationally inspect service station dispensers	81
I0311	Calibrate service station pump dispensing unit meters	81
B0054	Inspect air compressors or hoses	81
E0199	Adjust rate-of-flow controls	81
E0220	Repair or replace pressure-relief controls	81
E0200	Inspect automatic valve main valve bodies	79
N0535	Perform self-aid and buddy-care activities	79
A0021	Inspect product recovery systems	79

* Average Number of Tasks Performed - 247

TABLE 31

EQUIPMENT OR VEHICLES OPERATED OR MAINTAINED BY FIRST-ENLISTMENT AFSC 3E4X2 PERSONNEL

EQUIPMENT	1ST ENL (N=67)
Gasket Cutting Kits	96
Portable Air Compressors	96
Radios	96
Hand Pipe Threaders and Cutters	94
Lubricating Grease Guns	93
Meters, Master	93
Prover Cans (5-gallon)	93
Flange Spreaders	91
Impact Wrenches	91
Tube Bending Kits	88
Fuel Bowsers	87
Electric Drills	84
Torque Wrenches	84
Multimeters	82
Absorbent Spill Materials	79
Combustible Gas and Oxygen Indicators	79
Gauging Tapes	79
Pumps, Portable Pneumatic	78
Compressed Air Respirators and Hoses	75
Coppus Blowers	75
Grinders	75
Hydraulic Pressure Gauge Testers	72
Hand Tools, other than AMCO Nonsparking	70
Power Pipe Threaders and Cutters	70
Pneumatic Drills	69
Compressed Air Tank Regulators	67
Hand Tools, AMCO Nonsparking	67
Flare Kits	66
Flange Jacks	63
Tripods/Winches	61

Training Emphasis (TE) and Task Difficulty (TD) Data

TE and TD data are secondary factors that can assist technical school personnel in deciding which tasks should be emphasized in entry-level training. These ratings, based on the judgments of senior career ladder NCOs working at operational units in the field, are collected to provide training personnel with a rank-ordering of those tasks in the JI considered important for first-enlistment personnel training, along with a measure of the difficulty of the JI tasks. When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors (TE and TD), accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving high task factor ratings but low percentages performing may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best omitted from training for first-enlistment personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks.

To assist technical school personnel, AFOMS has developed a computer program that incorporates these secondary factors and the percentage of first-enlistment personnel performing each task to produce an Automated Training Indicator (ATI) for each task. ATIs correspond to training decisions listed and defined in the Training Decision Logic Table found in Attachment 2, AETCI 36-2601, and allow course personnel to quickly focus their attention on those tasks which are most likely to qualify for initial resident course consideration.

Table 32 presents tasks with the highest TE ratings for AFSC 3E4X2 first-enlistment airmen. For example, this table shows that TE raters reported tasks such as replacing mechanical seals and adjusting rate-of-flow controls require a high degree of training emphasis. In general, tasks covering the maintenance of automatic valves and components are given high TE ratings, and the data indicate that most airmen in their first job and within their first enlistment are performing these tasks.

Table 33 displays those tasks AFSC 3E4X2 raters judged to be the most difficult to learn to perform satisfactorily. This table shows that TD raters reported troubleshooting electrical circuits or components, other than PLC controls, and adjusting or calibrating differential pressure transmitters (DPTs) to be among the most difficult tasks to learn to perform satisfactorily. The TD raters also indicated that tasks such as adjusting programmable logic computer (PLC) batteries and overhauling trirotor pumps to have high task difficulty as well; however, due to the low numbers of first-job and first-enlistment members performing those tasks, they would be inappropriate for inclusion in a resident curriculum and are more appropriately taught as OJT items.

Various lists of tasks, accompanied by TE and TD ratings, and where appropriate, ATI information, are contained in the TRAINING EXTRACT package and should be reviewed in detail by training school personnel. (For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the **SURVEY METHODOLOGY** section of this report.)

TABLE 32

TASKS RATED HIGHEST IN TRAINING EMPHASIS

TASKS		TNG EMP*	PERCENT MEMBERS PERFORMING 1ST JOB (N=25)	PERCENT MEMBERS PERFORMING 1ST ENL (N =67)	TSK DIF**
E0228	Troubleshoot automatic valves	7.31	84	88	7.27
G0266	Replace mechanical seals	7.23	72	73	6.84
E0199	Adjust rate-of-flow controls	7.00	72	81	5.48
E0198	Adjust pressure-relief controls	7.00	68	84	5.43
H0273	Hydrostatically pressure-test pipeline systems	6.92	64	69	5.58
E0197	Adjust pressure-reducing controls	6.85	60	76	5.46
E0227	Replace diaphragms	6.77	76	82	4.84
G0248	Adjust deep-well turbine pump impellers	6.77	56	55	6.24
E0196	Adjust opening or closing speed controls	6.77	72	78	5.36
G0250	Adjust pump coupling alignments	6.62	52	54	6.39
H0280	Interpret mechanical schematics	6.62	44	58	6.29
G0249	Adjust mechanical seals	6.54	60	66	6.64
E0207	Operationally inspect automatic control valves or components	6.54	64	76	5.28
E0221	Repair or replace rate-of-flow controls	6.54	68	73	4.96
E0222	Repair or replace rotary disc assemblies	6.54	64	63	5.16
E0220	Repair or replace pressure-relief controls	6.54	68	81	4.96
A0040	Test vapor levels in enclosed areas	6.54	76	82	5.09
E0219	Repair or replace pressure-reducing controls	6.46	72	79	5.05
E0211	Repair or replace CDHS-2	6.46	60	75	5.19
I0311	Calibrate service station pump dispensing unit meters	6.46	68	81	5.02
E0195	Adjust excess flow shutoff controls	6.46	52	60	5.73
E0216	Repair or replace excess flow shutoff controls	6.46	56	60	5.35
E0217	Repair or replace opening or closing speed control components	6.38	76	76	4.82
E0218	Repair or replace powertrols	6.38	56	64	5.04
E0212	Repair or replace CDHS-3	6.38	68	75	5.18
D0132	Adjust high-level alarms	6.38	56	67	6.20

* Mean TE Rating is 2.75, and Standard Deviation is 2.37 (High TE = 5.12)

** Average TD Rating is 5.00

TABLE 33

TASKS RATED HIGHEST IN TASK DIFFICULTY

TASKS		TSK DIF	PERCENT MEMBERS PERFORMING 1ST JOB (N=25)	1ST ENL (N=67)	3-SKL LVL (N=56)	5-SKL LVL (N=74)	7-SKL LVL (N=35)	TNG EMP
L0426	Troubleshoot electrical circuits or components, other than PLC controls	7.44	20	27	29	27	43	4.46
D0139	Adjust or calibrate differential pressure transmitters (DPT)	7.39	36	33	39	22	34	5.38
E0228	Troubleshoot automatic valves	7.27	84	88	88	92	71	7.31
D0136	Adjust programmable logic computer (PLC) batteries	7.26	12	12	13	7	9	3.31
D0138	Adjust or calibrate differential pressure flow switches	7.25	36	40	43	30	31	5.77
D0194	Troubleshoot PLC controls	7.23	16	19	21	11	29	5.00
B0074	Maintain electronic automatic tank gauges (ATGs), such as ITT Barton	7.17	44	33	38	28	31	3.69
D0131	Adjust flow indicators, such as pressure indicator transmitters (PITs)	7.16	36	40	46	30	34	5.38
L0425	Rewire electrical motors	7.10	28	28	27	23	17	3.31
C0130	Troubleshoot leak detection systems	7.03	20	28	29	31	34	4.08
I0355	Troubleshoot VIL assemblies	6.92	20	31	36	24	34	2.38
L0424	Review electrical schematics	6.90	28	34	34	38	31	4.31
G0262	Repair deep-well turbine pumps	6.88	44	54	55	45	51	5.08
G0266	Replace mechanical seals	6.84	72	73	79	68	63	7.23
B0071	Interpret as-built drawings	6.73	60	63	68	77	77	5.69
G0261	Overhaul trirotor pumps	6.70	4	6	9	4	6	2.92
G0257	Overhaul centrifugal pumps	6.66	28	40	41	42	43	6.31
G0249	Adjust mechanical seals	6.64	60	66	71	64	54	6.54
D0161	Install modification kits on vertical filter separators	6.59	24	33	34	31	17	2.69
N0496	Determine cost factors for support agreements	6.58	0	0	0	3	9	.00
N0488	Complete operations plan (OPLAN) sourcing requirements	6.57	8	6	7	4	3	.00
G0260	Overhaul rotary-vane pumps	6.56	24	36	41	39	40	5.54
B0080	Perform tank cleaning supervisor activities	6.52	0	7	11	39	57	1.38
G0267	Replace pump bearings	6.51	44	51	59	46	51	5.92
G0263	Repair deep-well turbine ratchets	6.51	8	21	27	16	23	4.23

* Mean TE Rating is 2.75, and Standard Deviation is 2.37 (High TE = 5.12)

** Average TD Rating is 5.00

Specialty Training Standard (STS)

A comprehensive review of STS 3E4X2, dated April 1997, was performed by comparing STS elements to survey data. Technical school personnel from the 366th Training Squadron, Sheppard AFB TX, matched JI tasks to appropriate STS elements. (The STS elements containing general knowledge information, mandatory entries, subject-matter-knowledge-only requirements, or basic supervisory responsibilities were not examined.) Task knowledge and performance elements of the STS were compared against the standard set forth in AETCI 36-2601 and AFI 36-2623. Typically, STS elements that are matched to tasks with sufficiently high TE and TD ratings and are performed by at least 20 percent of personnel in appropriate skill-level groups, such as first-job (1–24 months' TAFMS) members and 3-skill level members, should be considered for inclusion in the STS. Likewise, elements matched to tasks with less than 20 percent performing in these groups should be considered for deletion from the STS.

All 3E4X2 STS elements matched to JI tasks are well supported by occupational survey data. Table 34 lists examples of tasks not referenced to STS elements with 20 percent or more first-job, first-enlistment, or 3-skill level members performing. The majority of these tasks have high percent members performing, high TE ratings, and average TD ratings. Tasks not referenced to any element of the STS are listed at the end of the STS computer listing of the Training Extract. Training personnel should review these tasks for possible inclusion in the STS.

Plan of Instruction (POI)

JI tasks were matched to related training objectives in the J3ABR3E432-003 POI, dated 12 April 1999, for the entry-level course with assistance from 366th Training Squadron personnel. The method employed was similar to that of the STS percent members performing data for first-job (1–24 months' TAFMS), first-enlistment (1–48 months' TAFMS), and TE, TD, and ATI ratings.

POI blocks, units of instruction, and learning objectives were compared to the standard criteria set forth in AETCI 36-2601, dated 5 July 1997 (30 percent or more of the first-enlistment group performing tasks trained along with sufficiently high TE and TD ratings on those tasks). Tasks trained in the course that do not meet these criteria should be considered for possible deletion from the course.

The review of tasks matched to the J3ABR3E432-003 POI revealed that the POI is well supported by occupational survey data. Table 35 lists examples of tasks not referenced to the POI with 30 percent or more first-job or first-enlistment members performing. As with the tasks not referenced to the STS, the majority of these tasks have high percent members performing, average or high TE ratings, and average TD ratings. All of the tasks listed also have high ATI ratings. Tasks not referenced to any element of the POI are listed at the end of the POI computer listing of the Training Extract. As with the STS, training personnel should review these tasks for possible inclusion in the POI.

TABLE 34

EXAMPLES OF TASKS NOT REFERENCED TO STS ELEMENTS
WITH 20 PERCENT OR MORE MEMBERS PERFORMING

TASKS		TNG EMP	PERCENT MEMBERS PERFORMING 1ST JOB (N=25)	1ST ENL (N=67)	3-SKL LVL (N=56)	TASK DIFF	ATI
G0256	Operationally inspect fuel pumps	6.15	68	78	80	4.89	18
J0372	Overhaul single-point nozzles	6.23	60	72	68	5.72	18
D0160	Inspect tank vents	3.38	28	54	55	4.31	17
J0375	Repair quick disconnect couplings, such as kam-lock or drybreak	4.62	52	70	66	4.90	17
P0635	Attend Prime Base Engineering Emergency Force (BEEF) training	3.23	56	57	59	4.33	17
N0548	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	2.69	52	75	68	4.29	16
B0074	Maintain electronic automatic tank gauges (ATGs), such as ITT Barton	3.69	44	33	38	7.17	15
H0272	Flush pipelines	3.23	52	46	54	4.84	15
J0371	Overhaul quick-closing valves	4.62	28	37	39	5.41	15
P0636	Attend skill-level upgrade training	3.62	44	48	50	4.93	15
C0117	Maintain benchstock of spill clean-up materials or equipment	1.38	24	39	38	4.45	14
N0529	Perform explosive ordnance reconnaissance	1.77	28	33	27	4.75	14
R0692	Maintain benchstock parts or equipment levels	2.08	24	33	30	4.66	14

* Mean TE Rating = 2.75 Standard Deviation = 2.37 High TE = 5.12
** Mean TD Rating = 5.00 Standard Deviation = 1.00 High TD = 6.00

TABLE 35

EXAMPLES OF TASKS NOT REFERENCED TO POI ELEMENTS WITH 30 PERCENT OR MORE MEMBERS PERFORMING

TASKS		TNG EMP	PERCENT MEMBERS PERFORMING 1ST JOB (N=25)	1ST ENL (N=67)	TASK DIFF	ATI
G0256	Operationally inspect fuel pumps	6.15	68	78	4.89	18
J0372	Overhaul single-point nozzles	6.23	60	72	5.72	18
G0249	Adjust mechanical seals	6.54	60	66	6.64	18
K0379	Blind flange open pipelines	4.69	84	87	4.05	17
K0387	Drain pipelines	4.31	88	85	4.15	17
N0535	Perform self-aid and buddy-care activities	3.31	68	79	4.77	17
K0386	Drain fuel storage tanks	3.85	76	72	4.24	17
J0375	Repair quick disconnect couplings, such as kam-lock or drybreak	4.62	52	70	4.90	17
B0081	Perform tank cleaning worker activities	4.62	48	58	4.74	17
K0380	Cap off adjoining piping from storage tanks	3.85	48	57	4.25	17
B0068	Inspect underground storage tank low-level or high-level floats	4.15	52	55	4.80	17
D0160	Inspect tank vents	3.38	28	54	4.31	17
K0391	Isolate electrical power from systems	3.69	56	54	5.37	17
B0065	Inspect tank interiors for corrosion, holes, or pits	3.77	40	51	5.02	17
N0548	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	2.69	52	75	4.29	16
N0505	Inspect chemical warfare personal protective clothing	2.54	52	64	4.23	16
N0525	Perform camp security	2.08	60	58	4.02	16
M0437	Construct field utility systems	2.31	48	57	5.09	16
M0445	Identify and report suspected unexploded ordnance (UXO)	2.46	48	57	4.57	16
K0381	Clean deactivated pumps, filter separators, meters, or storage tanks for product recovery systems	2.00	44	55	4.59	16
K0383	Deactivate electrical power from systems	2.23	60	54	5.12	16

* Mean TE Rating = 2.75 Standard Deviation = 2.37 High TE = 5.12

** Mean TD Rating = 5.00 Standard Deviation = 1.00 High TD = 6.00

JOB SATISFACTION ANALYSIS

An examination of the job satisfaction indicators of various groups can give career ladder managers a better understanding of some of the factors which may affect the job performance of airmen in the career ladder. Attitude questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions were included in the survey to provide indications of job satisfaction.

Table 36 presents job satisfaction data for AFSC 3E4X2 TAFMS groups, together with TAFMS data for a comparative sample of Support career ladders surveyed in 1998. Second-enlistment personnel and career airmen rated utilization of talents, utilization of training, and sense of accomplishment higher than the comparative sample. First-enlistment personnel indicated lower job interest, utilization of talents, utilization of training, and sense of accomplishment than the 1998 comparative sample, but they rated their intentions to reenlist higher than the comparative sample. Second-enlistment personnel also indicated that their reenlistment intentions are higher than the comparative sample.

An indication of how job satisfaction perceptions have changed over time is provided in Table 37, where TAFMS data for the current survey respondents are compared to the 1997 survey respondents' perceptions. Job interest, utilization of talents, and utilization of training, and sense of accomplishment have decreased for the 1-48 months' TAFMS groups over the past 2 years while the same factors have increased for the second-enlistment and career airmen over the past 2 years. Reenlistment intentions are slightly lower for all TAFMS groups compared to the 1997 survey.

In Table 38, a review of the job satisfaction ratings for the specialty clusters and jobs identified in this survey reveals high satisfaction ratings for all areas among the Liquid Fuel Systems Maintenance members. The members of the Management Job provided the lowest ratings for job interest, and the members of the Reserve Forces Readiness Job perceive their utilization of talents and training to be low compared to the members of the Liquid Fuel Systems Maintenance Cluster, the General Maintenance Cluster, and Management Job. The 10 members of the Reserve Forces Readiness Job also rated their sense of accomplishment as the lowest among the other job and clusters in the study. The core of the career ladder, however, provided high ratings for the four job satisfaction indicators.

TABLE 36

COMPARISON OF JOB SATISFACTION INDICATORS BY TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1–48 MOS TAFMS		49–96 MOS TAFMS		97+ MOS TAFMS	
	1999 3E4X2 (N=67)	COMP SAMPLE* (N=249)	1999 3E4X2 (N=27)	COMP SAMPLE* (N=190)	1999 3E4X2 (N=71)	COMP SAMPLE* (N=383)
EXPRESSED JOB INTEREST:						
INTERESTING	57	77	78	80	86	81
SO-SO	24	13	11	10	6	12
DULL	19	10	11	10	8	7
PERCEIVED UTILIZATION OF TALENTS:						
FAIRLY WELL TO PERFECTLY	72	85	89	83	88	83
LITTLE OR NOT AT ALL	28	15	11	17	12	17
PERCEIVED UTILIZATION OF TRAINING:						
FAIRLY WELL TO PERFECTLY	84	87	89	85	93	81
LITTLE OR NOT AT ALL	16	13	11	15	7	19
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:						
SATISFIED	65	74	78	72	80	73
NEUTRAL	13	10	15	12	6	9
DISSATISFIED	22	16	7	16	14	18
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	51	47	63	56	69	72
NO OR PROBABLY NO	49	53	37	44	7	11
PLAN TO RETIRE	0	0	0	0	24	17

* Comparative sample of Support career ladders surveyed in 1998, including AFSCs 3N0X1, 3N0X2, and 3V0X2.

TABLE 37

COMPARISON OF CURRENT SURVEY AND 1997 TAFMS GROUPS
(PERCENT MEMBERS RESPONDING)

	1–48 MOS TAFMS		49–96 MOS TAFMS		97+ MOS TAFMS	
	1999 3E4X2 (N=67)	1997 3E4X2 (N=72)	1999 3E4X2 (N=27)	1997 3E4X2 (N=48)	1999 3E4X2 (N=71)	1997 3E4X2 (N=68)
EXPRESSED JOB INTEREST:						
INTERESTING	57	71	78	73	86	85
SO-SO	24	21	11	15	6	10
DULL	19	8	11	12	8	5
PERCEIVED UTILIZATION OF TALENTS:						
FAIRLY WELL TO PERFECTLY	72	78	89	84	88	81
LITTLE OR NOT AT ALL	28	22	11	16	12	19
PERCEIVED UTILIZATION OF TRAINING:						
FAIRLY WELL TO PERFECTLY	84	91	89	75	93	88
LITTLE OR NOT AT ALL	16	9	11	25	7	12
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:						
SATISFIED	65	67	78	69	80	86
NEUTRAL	13	25	15	13	6	7
DISSATISFIED	22	8	7	18	14	7
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	51	53	63	67	69	74
NO OR PROBABLY NO	49	47	37	31	7	2
PLAN TO RETIRE	0	0	0	2	24	24

TABLE 38

COMPARISON OF JOB SATISFACTION INDICATORS BY SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)

	Liquid Fuel Systems Maintenance Cluster (STG028) (N=156)	General Maintenance Cluster (STG014) (N=20)	Reserve Forces Readiness Job (STG040) (N=10)	Management Job (STG027) (N=16)
EXPRESSED JOB INTEREST:				
INTERESTING	74	75	70	63
SO-SO	14	15	10	25
DULL	12	10	20	12
PERCEIVED UTILIZATION OF TALENTS:				
FAIRLY WELL TO PERFECTLY	82	80	60	69
LITTLE OR NOT AT ALL	18	20	40	31
PERCEIVED UTILIZATION OF TRAINING:				
FAIRLY WELL TO PERFECTLY	90	65	40	63
LITTLE OR NOT AT ALL	10	35	60	37
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:				
SATISFIED	74	65	30	63
NEUTRAL	13	15	30	6
DISSATISFIED	13	20	40	31

IMPLICATIONS

This survey was initiated to provide current job and task data for use in evaluating the AFMAN 36-2108 *Specialty Description* and appropriate training documents. Survey results clearly indicate that the present classification structure, as described in the latest specialty description, accurately portrays the jobs performed in this career ladder.

Entry-level training programs for AFSC 3E4X2 personnel appear to be working well as indicated by the high ratings by all TAFMS groups to the question pertaining to training utilization. The survey data indicate that the career ladder training documents are well supported. Some adjustments may be warranted as discussed in the STS and POI analysis sections of this report.

The career ladder progression for the total sample is typical with the move from technical work at the 3- and 5-skill levels to supervisory and management tasks at the 7- skill level. The 7-skill level members are still spending the majority of their time performing tasks that are technical in nature, but they are also spending 25 percent of their time performing management and supervisory activities. The ANG and AFRC members are performing more technical tasks as they progress from one skill level to the next although the career ladder progression for these members is still typical. Much more time is also being spent on mobility, contingency, and Prime BEEF activities by the ANG and AFRC members.

Overall, job satisfaction is higher for second-enlistment personnel and career airmen and reenlistment intentions are higher for first-enlistment and second-enlistment members compared to the sample of like Support AFSCs surveyed in 1998. The 1-48 months' TAFMS group members in this sample are also less satisfied compared to the same TAFMS group in the 1997 study. The career airmen indicated that they are the most satisfied in expressed job interest, their perception of training utilization, and the sense of accomplishment gained from their work.

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APPENDIX A

SELECTED REPRESENTATIVE TASKS PERFORMED BY SPECIALTY JOB GROUPS

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TABLE A1

LIQUID FUEL SYSTEMS MAINTENANCE CLUSTER (STG028)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING (N=156)
A0024	Install or remove filter-separator elements	97
A0008	Cut gasket materials	97
A0005	Clean work areas	96
A0037	Replace nozzles	96
C0097	Clean up fuel spills with absorbent materials	96
A0003	Clean hand tools	96
A0041	Thread pipes	94
E0228	Troubleshoot automatic valves	93
A0039	Replace service station fuel hoses	92
K0385	Drain filter separators	92
E0207	Operationally inspect automatic control valves or components	92
E0203	Inspect valve position indicators (VPIs)	92
E0227	Replace diaphragms	91
A0028	Operationally inspect filter separators	90
L0411	Perform tag-out or lock-out procedures	90
D0173	Join pipes with bolted flanges	90
D0174	Join pipes with threaded fittings	90
F0229	Adjust packing glands on manual valves	90
E0198	Adjust pressure-relief controls	90
J0357	Inspect hose connections	89
D0168	Install or remove pressure gauges	89
E0199	Adjust rate-of-flow controls	89
A0026	Manually bleed air off fuel systems	89
A0015	Ground portable equipment	88
G0256	Operationally inspect fuel pumps	88
E0200	Inspect automatic valve main valve bodies	88
F0243	Repair or replace manual valves, other than check valves	88
E0220	Repair or replace pressure-relief controls	88
I0345	Replace service station pump hoses	87
I0319	Operationally inspect service station pumps	87
B0054	Inspect air compressors or hoses	87
F0235	Operationally inspect manual valves, other than check valves	87
H0305	Replace flange gaskets	87
F0230	Inspect check valves	87
A0021	Inspect product recovery systems	87
E0197	Adjust pressure-reducing controls	87
E0219	Repair or replace pressure-reducing controls	87
I0316	Operationally inspect service station dispensers	86
A0040	Test vapor levels in enclosed areas	86
E0196	Adjust opening or closing speed controls	86
E0221	Repair or replace rate-of-flow controls	86
I0341	Replace service station nozzles	85
I0313	Inspect service station fuel hoses	85
I0311	Calibrate service station pump dispensing unit meters	85

TABLE A2

GENERAL MAINTENANCE CLUSTER (STG014)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING (N=20)
A0005	Clean work areas	95
A0003	Clean hand tools	95
A0008	Cut gasket materials	95
A0024	Install or remove filter-separator elements	90
C0097	Clean up fuel spills with absorbent materials	80
A0015	Ground portable equipment	80
A0041	Thread pipes	75
A0039	Replace service station fuel hoses	75
A0028	Operationally inspect filter separators	70
A0037	Replace nozzles	70
A0026	Manually bleed air off fuel systems	65
A0018	Inspect grounding cables, rods, or bonding devices	60
A0025	Install or remove strainer screens	60
A0016	Ground tank cars, trucks, or other vehicles	60
A0007	Cut copper tubing	60
K0385	Drain filter separators	55
A0004	Clean strainer screens	55
A0017	Inspect dikes or dike basins	55
A0009	Cut pipes with hand tools	55
A0014	Flare copper tubing	55
N0548	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	55
A0001	Bend copper tubing	55
D0174	Join pipes with threaded fittings	50
A0040	Test vapor levels in enclosed areas	50
A0019	Inspect loading fuel hoses	45
H0305	Replace flange gaskets	45
G0255	Lubricate pump motors	45
B0060	Inspect manhole covers for leaks	45
N0501	Don or doff chemical warfare personal protective clothing	45
D0173	Join pipes with bolted flanges	45
B0043	Clean protective clothing or equipment, other than chemical warfare	45
N0535	Perform self-aid and buddy-care activities	45
A0012	Cut stencils	45
A0010	Cut pipes with power cutters	45
G0256	Operationally inspect fuel pumps	40
D0154	Inspect aboveground tanks	40
E0228	Troubleshoot automatic valves	40
A0023	Install or remove compression fittings, such as ferrules	40
C0112	Inspect fire extinguishers	35
A0032	Perform corrosion control on exterior metal surfaces	35
A0020	Inspect off-loading fuel hoses	35
L0411	Perform tag-out or lock-out procedures	35
K0387	Drain pipelines	35
H0273	Hydrostatically pressure-test pipeline systems	35

TABLE A3

RESERVE FORCES READINESS JOB (STG040)

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING (N=10)
N0548	Tear down, inspect, clean, and reassemble weapons, such as M-16 rifles	100
N0535	Perform self-aid and buddy-care activities	100
N0526	Perform chemical warfare agent decontamination procedures	100
N0525	Perform camp security	100
N0523	Participate in convoy exercises	100
N0527	Perform cover and concealment techniques for work party security	100
N0524	Perform camouflage procedures	100
N0501	Don or doff chemical warfare personal protective clothing	90
N0506	Inspect mobility bags or kits	90
N0504	Identify chemical warfare agents	90
N0529	Perform explosive ordnance reconnaissance	90
N0531	Perform or set up site security	90
N0530	Perform hardened facility activities	90
M0454	Lay AM-2 matting	90
N0505	Inspect chemical warfare personal protective clothing	80
N0549	Transport mobility or contingency equipment to or from deployed locations	80
N0536	Prepare equipment for deployments	80
N0503	Fill sandbags	80
M0445	Identify and report suspected unexploded ordnance (UXO)	80
N0507	Inspect packed or palletized mobility or contingency equipment prior to transport	80
N0534	Perform RRRs	80
N0528	Perform disease or pestilence countermeasures	80
M0466	Operate and maintain shower/shave units	80
A0005	Clean work areas	80
M0467	Perform bomb damage repairs, other than crater repairs	80
N0484	Assemble rapid utility repair kits, such as RURK Is or RURK IIs	80
P0635	Attend Prime Base Engineering Emergency Force (BEEF) training	70
M0480	Set up or tear down bare base structures	70
N0487	Clean chemical warfare personal protective clothing	70
P0659	Maintain training records or files	70
M0465	Operate and maintain field utility systems	70
M0479	Repair bomb craters	70
M0436	Construct field latrines	70
N0500	Dig trenches	70
M0437	Construct field utility systems	70
M0427	Assemble AM-2 matting	70
N0547	Set up and operate reverse osmosis water purification units (ROWPUs)	60
M0471	Perform damage assessments	60
N0537	Prepare sites at deployed locations, such as cutting grass or removing snow	60
O0556	Conduct self-inspections or self-assessments	60
N0540	Refuel tent heaters	60
R0690	Inventory equipment, tools, parts, or supplies	50
M0473	Perform damage control activities, other than command and control activities	40

TABLE A4

MANAGEMENT JOB (STG027)

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING (N=16)
O0625	Schedule work assignments or priorities	100
O0562	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	100
O0564	Determine or establish work assignments or priorities	94
O0572	Direct training activities	94
P0661	Plan or schedule training	94
O0586	Evaluate job or position descriptions	94
O0606	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	88
O0593	Evaluate personnel for promotion, demotion, reclassification, or special awards	88
O0603	Inspect personnel for compliance with military standards	88
P0645	Determine training requirements	88
P0664	Schedule personnel for training	88
P0659	Maintain training records or files	88
O0596	Evaluate work schedules	88
O0561	Counsel subordinates concerning personal matters	88
O0556	Conduct self-inspections or self-assessments	88
O0559	Conduct supervisory performance feedback sessions	81
O0630	Write recommendations for awards or decorations	81
O0570	Develop or establish work schedules	81
O0629	Write performance reports or supervisory appraisals	81
O0560	Coordinate maintenance of liquid fuel systems, other than tank cleaning, with appropriate agencies	81
P0643	Conduct on-the-job training (OJT)	81
R0690	Inventory equipment, tools, parts, or supplies	81
O0601	Initiate actions required due to substandard performance of personnel	81
O0604	Interpret policies, directives, or procedures for subordinates	81
O0571	Direct administrative activities	75
O0592	Evaluate personnel for compliance with performance standards	75
O0551	Assign personnel to work areas or duty positions	75
P0655	Evaluate progress of trainees	75
O0558	Conduct supervisory orientations for newly assigned personnel	75
P0644	Counsel trainees on training progress	75
O0580	Establish performance standards for subordinates	75
R0689	Initiate requisitions for equipment, tools, parts, or supplies	75
O0569	Develop or establish work methods or procedures	75
O0623	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	75
O0611	Plan equipment or facility maintenance requirements	75
O0595	Evaluate safety or security programs	75
O0600	Indorse performance reports or supervisory appraisals	69
P0635	Attend Prime Base Engineering Emergency Force (BEEF) training	69
P0654	Evaluate personnel to determine training needs	69
O0589	Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	69